A COMPARATIVE STUDY OF AMERICAN AND JAPANESE STUDENTS

by

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A COMPARATIVE STUDY OF AMERICAN AND JAPANESE STUDENTS.

CHAPTER I

INTRODUCTION

After hearing much discussion on American and Japanese students, the author became interested in this problem and decided to investigate it in order to obtain factual material on this subject to use as a basis for forming his opinions. It is also felt that this study will serve a utilitarian purpose to the people of the community in which the research work was done as well as to others. Since there is much vague opinion on this subject, it is hoped that the results of this thesis will give one a better understanding and a more wholesome attitude toward racial problems. It is not the purpose of this study to solve the problems of racial differences, if any, but to point them out and to suggest possible solutions.

In the locality in which the research work was carried on, the problem of Japanese students in the American public high schools is of great importance to the administrative and instructional phases of the educational institutions. It is hoped that this study will throw some light on the relative mental ability and scholastic average, and factors contributing to them.
If this is done the school will be better able to fit the curriculum to the needs and abilities of the racial groups; therefore, contributing to the economy of cost and time for educational purposes which are two of the most important present-day problems in our educational institutions. It is hoped that the results of this study will be of assistance to the teachers of these groups, so that they will be better able to understand and appreciate the factors influencing student scholastic attainments and student participation in extra-curricular activities.

Location of Research Work: The research work on this study was carried on in the Elk Grove Union High School at Elk Grove, California, with the permission of Principal Edwin A. Wells and the Board of Trustees of the school. Elk Grove Union High School is a four year institution drawing its pupils from fifteen grammar school districts, extending over an approximate radius of ten miles.

Type of Locality: The locality is mainly rural consisting of diversified farms with the exception of several small towns with populations of about one thousand persons in each. The residents of the towns are employed in business enterprises, but those outside of the towns are largely engaged in the operation
of small farms or work for the farmers by contract on the crops. A greater percentage of the Japanese are engaged in agricultural pursuits than in business activities. This also applies to the Americans, but there is a larger percentage of Americans in business than Japanese. The educational facilities outside of the schools are limited, but it is possible for them to overcome these limitations by commuting to Sacramento, which is only a short distance, thereby increasing their educational opportunities, if they desire to do so.

Size of the Group: The high school enrollment consists of three hundred and sixty-seven students. It was possible to obtain data on three hundred and eleven of this group, one hundred and five of which are Japanese and two hundred and six are Americans. The author believes that the unobtained data would not cause any significant differences in the results. The senior class consists of forty-three Americans and eighteen Japanese students. In the junior class there are forty-five Americans and twenty Japanese students. The sophomore class consists of fifty-six Americans and thirty-three Japanese. The freshman class consists of sixty-two Americans and thirty-four Japanese.
Limitations on this Study: The lack of time was an influencing factor on the limitations of this study. If more time were available, it would have been possible to get other measures of scholastic attainment not included in the tests given. Cost also limited this study since the author had to take the available data and could not afford to spend much money in obtaining more measures such as a non-language test which would do away with the language handicap of the Japanese students. Another factor limiting this study is the lack of data concerning the selectivity of the groups. Data of the junior class on the Stanford Achievement Test was available, with the exception of scores on Literature, History and Civics, Geography, Physiology and Hygiene, Arithmetic Reasoning, and Arithmetic Computation.

The tests used in this study are The Inglis Tests of English Vocabulary, Form B; The Clinton Vocabulary Test, Form I; The Otis Self-administrating Test of Mental Ability, Higher Examination, Form A; Thorndike-McCall Reading Scale, Form I; The Iowa Silent Reading Test, Form B; and the Stanford Achievement Test, Advanced Examination, Form W.

designed to measure the students' knowledge of the Intelligent Reader's Vocabulary; that is, of those words which belong neither to our every day vocabulary of commonest words, nor to special and technical vocabularies, but which constitute a large part of the educated person's vocabulary. This test is designed primarily to test the student's reading vocabulary rather than his active vocabulary. This test should provide valuable information of assistance in diagnosing the student's ability to use language and in guiding his educational endeavors. It should be useful in determining the classification of students, in ascertaining their fitness for certain studies, in grading their work, and in establishing the appropriate character of content and method. It should disclose the strength or weakness of the student's vocabulary and thereby afford both the teacher and the student opportunity for improving his uses of language. Best of all perhaps, it affords a means by which the student himself, as well as the teacher, from time to time can determine progress toward the objective of an effective English vocabulary."

The standards in terms of median scores were obtained by returns from thousands of high school and college students. The reliability is .90.

"The Clinton General Vocabulary Test 2 is designed

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2. "Directions for the Clinton General Vocabulary Test"
to measure the extent of a person's general reading and understanding vocabulary, and not his active vocabulary. It is diagnostic of an individual's word knowledge. One of the primary functions of these vocabulary tests is to diagnose the individual's ability to use and understand words. They can be used to guide one's educational effort. Vocabulary is so important and so indicative that this test serves admirably as one of the tests for a complete diagnosis. They will be useful in classifying students. These tests can be used as one of the battery given college and university students at the time of entrance into the institutions. It correlates rather highly with college success. These tests will stimulate the pupil to improve his vocabulary. The reliability of the test as determined by the use of the Spearman-Brown Formula is .94." Time is not a factor in this test since it is a power and not a speed test. There are two types of norms in this test: the number of words properly defined for each year of the high school and college, and the extent of one's vocabulary in thousands of words. The norms were based on about 4000 cases.

The Otis Self-Administering Test of Mental Ability

was used to get a measure of the relative mental ability of the groups. This test contains a variety of test material consisting of some twenty types of questions that insure a comprehensive measurement. "The chief administrative purposes for which mental ability tests are given are: first, the division of the pupils of a grade or the students of a class into more homogeneous divisions, usually in order that instruction of different degrees of enrichment may be given; second, the regrading of pupils so that the pupils of each grade are more homogeneous in mental ability and are therefore more easily taught together; third, the division of pupils of a school into groups which will progress at different rates." The reliability coefficient for the Higher Examination is .92.

Thorndike-McCall Reading Scale deals with reading comprehension. It is of valuable assistance to the teacher in making of assignments since they have a measure of the individual's reading and comprehension as well as the group scores. Norms are given for the grades 2 A to 12 A. There are two ways of expressing the reading ability of a pupil (or of a class). How well a pupil reads is shown first by a comparison of his reading score with the norm for his grade and record, by a comparison of his reading score with the norm for his age. Scores are expressed in T-scores.
"The Iowa Silent Reading Test; 4 Form B, for high schools and colleges cover a wide range of skills indispensable to effective work-study reading. It is analytical, covering in six different types of tests comprehension, organization, ability to locate information, and rate of reading. The recognized importance of the ability to read as a limiting factor in school achievement makes advisable the use of this test as a guide to teachers in making assignments, in judging the character of work done, and in organizing groups for instruction. Norms are available by grade levels and percentile ranks in each grade. The time for giving the Advanced Test is thirty minutes. The reliability coefficient is .85 for the Advanced Test."

The New Stanford Achievement Test, Advanced Examination, Form W, is a battery of tests which contain tests in arithmetic computation, arithmetic reasoning, reading (both vocabulary and paragraph meaning), spelling, language usage, literature, history and civics, geography, physiology and hygiene. It measures the students knowledge and ability in the above school subjects. Age and grade norms are given which are representative of school children throughout the country. 5 "The reliability coefficient for total score in single grades varies from .89 to .96."

The personal data was acquired by means of a questionnaire. It included the following items: age in years and months; sex; grade or classification in school; estimated average time spent in study per day in school; estimated time spent per day in study outside of school; estimated time spent in work per day at home not including extra-curricular activities and study; amount of education of father; occupation of father; average income of father; the student's occupational interest or vocation that they intend to follow; place of residence, farm or in a town; the number of extra-curricular activities in which they participate; and the estimated average time used for extra-curricular activities per day.

Statistics and Statistical Formulas: The first step in the statistical treatment of the data was to organize the material which lead to a grouping of the measures into classes or a frequency distribution. The next step was to find a measure of central tendency. The value of a measure of central tendency is twofold: in the first place, it is a single measure which represents all the scores made by the group, and as such gives a concise description of the performance of the group as a whole; secondly, it enables us to compare

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two or more groups in terms of typical performance."

The variability is scatter or spread of the scores or measures around their measure of central tendency. Since the standard deviation is the most reliable of the measures of variability, it will be used in this problem. It is defined as the square root of the mean of the squared deviations taken from the average of the distribution. The coefficient of variation is a measure of relative variability and will be used since measures of absolute variability are not sufficient unless averages of the two distributions are equal or approximately equal.

The reliability of measures of central tendency used in this study is the probable error of the mean. The reliability of a mean depends upon the number of cases and variability or spread of the measures in the groups.

The reliability of the standard deviation, used in this study, is in terms of the probable error.

The reliability of the difference between the means is in terms of the probable error of the difference.

Correlation will be used in this study. 7 "It is a statistical device whereby relationship is expressed on

a quantitative scale called the "coefficient of correlation" and is designated by the letter "r". The probable errors of the coefficient of correlations will be determined in order to be sure that relationships are significant.

Formulas used for the interpretation of the data in this study are:

1. Measure of Central Tendency.

   (1) \( H = G.M. + \bar{C} \)

2. Measure of Variability.

   (1) Standard Deviation:
   \[
   \sigma = \sqrt{\frac{\sum x^2 - \bar{C}^2 \times N}{N}}
   \]

   (2) Coefficient of Variation:
   \[
   V = \frac{100 \times \sigma}{\bar{C}}
   \]

3. Reliability Formulas.

   (1) Mean:
   \[
   P.E. = \frac{.6745 \sigma (P.E.)}{\sqrt{N}}
   \]

   (2) Standard Deviation:
   \[
   P.E. = \frac{.6745 \sigma (P.E.)}{\sqrt{2 \times N}}
   \]
(3) Difference between means:

\[ P.E. \text{ Diff.} = \sqrt{P.E._{(m_1)}^2 + P.E._{(m_2)}^2} \]

4. Correlation:

(1) \[ r = \frac{\sum XY - c_x c_y}{\sigma_x \sigma_y} \]

(2) \[ P.E. = \frac{.6745 \times (1 - r^2)}{\sqrt{N}} \]

CHAPTER II
HISTORICAL STUDIES

In this chapter the author will review studies made on Japanese students that apply to the data in this study. The first study on the intelligence of Japanese students was reported by Kubo in 1922. He used a modified Binet on 536 children in Tokoyo, Japan, and obtained a mean I.Q. of 98.2. The age-range of this non-selected group was 6 to 9 years.

Fukada reported the first study of I.Q.'s for Japanese students in America in 1923. This investigator tested 43 Japanese students in Denver schools with an age range of 3 to 12 years. The mean I.Q. was found to be 97.

The largest group of Japanese in America, yet studied, was a group of 658 American-born children in California with the Stanford Revision of the Binet Scale and was reported by Darsie in 1926. The rural children

in the group obtained an average I.Q. of 77, but an I.Q. of 99.3 was found for the metropolitan children. The mean I.Q. of the total group was 91, but Darsie concedes that there was a language handicap for his subjects.

Porteus and Babcock in 1926 tested 229 Japanese subjects in Hawaii with the Stanford Revision of the Binet Scale, and found the mean I.Q. to be 84.6. The study of Sandiford and Kerr on 276 Japanese with the Pintner-Patterson Performance Test showed the median I.Q. to be 114.2 for the group. The investigators found that the Japanese exceed the American median scores and suggest that the superiority of the Japanese was due to selection, which is due to immigration. Also they feel that only the more intelligent Japanese go to school. In addition to tests of public school children, Porteus studied freshman students at the University of Hawaii. He reports that in the Thorndike College Entrance Examination, Anglo-Saxons ranked first, Japanese second, and Chinese third. It seems very likely from this that Kubo's I.Q. of 98.2 obtained with the modified Binet is

more clearly the correct I. Q. of the Japanese children, since they are a representative group of the Japanese in Japan.

On the Goodenough 6 Intelligence Test the Japanese show no significant difference in I. Q.'s as compared to the whites. The Japanese obtained a mean I. Q. of 101.9, and the American mean was 101.5 on this non-language test.

At this time it might be well to mention Parsie's conclusions on the relative mental capacity of Japanese children since the data on this study is quite closely related to his. Parsie's 7 conclusions are:

"1. Japanese children are inferior to those of American and northern European parentage in mental processes involving memory and abstract thinking based on meanings or concepts represented by the verbal symbols of the English language.

"2. Japanese children are at least equal and possibly superior to Americans in mental processes involving memory and thinking based upon concrete, visually presented situations of a non-verbal character.


"3. Japanese children are superior to Americans in mental processes involving acuity of visual perception and recall, and tenacity of attention."

Garth 8 says, "In applying intelligence tests, such as the Binet, where the influence of education has been reduced to a constant minimum, the results are trustworthy in a common cultural environment. This common cultural environment is granted for a group such as the American white, but there must be some question for a race such as the American Negro and much more question for the American Indian and the Mexican in the United States.

"It is true that the American Negro lives side by side with the white, but we believe that it will some day be proved that the very color of his skin is against him, and we know that his social status is a serious handicap. Ordinarily the color of the Indian's skin offers little of this handicap, though his social status generally militates against him. These same observations may be made of the Mexican in the United States. The social status of the Indian and of the Mexican in the United States is largely of their own choosing. They build up their own environments, perpetuating their own traditions,

deliberately spurning the white man's ways, preferring their own language and ideals. In fact they display an independence not characteristic of the Negroes. But all of these facts with regard to all three of these racial groups make it doubtful whether or not the intelligence-test results of these groups are the true measures of their intelligence.

"Be that as it may, disregarding the I.Q.'s of the immigrant groups, which we do not believe are measures of the average of the groups in their home lands, the racial I.Q.'s as found are, by way of resume: Whites, 100; Chinese, 99; Japanese, 99; Mexican, 78; southern Negroes, 75; northern Negroes, 85; American Indians, full blood, 70. If one says that what is fair for one is fair for another, then regardless of environmental difficulties, the Chinese and Japanese score so nearly like the white that the difference is negligible. Certainly they possess a quality which places them in a class beyond the Negro, the Mexican in the United States, and the American Indian, whatever that is. Perhaps it is temperament which makes the latter groups unable to cope with the white man's test. Again, it is barely possibly they cannot take the white man's seriousness seriously.

"Differences so far found in the intelligence of races can be easily explained by the influence of nurture
and of selection. The low I.Q.'s of such racial groups as the Negroes and the Indians are undoubtedly due to these factors. Rarely has a society endeavored to breed up the Negro or the Indian. Nor has their education ever been properly undertaken and generously supported. Recalcitrancy on their part toward the well-meaning but inadequate Caucasian efforts at uplift are not to be taken as a sign of inferiority. This may indicate the opposite. Any disposition upon our part to withhold from these, or similar, races, because we deem them inferior, the right to a free and full development to which they are entitled must be taken as an indication of rationalization on account of race prejudice; and such an attitude is inexcusable in an intelligent populace."

Darsie 9 finds that the Japanese score lower than the Americans on the Stanford Achievement Test, in paragraph, sentence and word meaning, and also have a lower reading composite score. The Americans are superior in vocabulary and language usage tests, but in spelling the Japanese are superior. "It will be seen that the Japanese retardation is greatest in the reading

tests, as might be expected. Somewhat surprising is the fact that the retardation becomes progressively greater from the tenth to the thirteenth year. One would suppose that growing familiarity with the language might tend to cut down the difference between Japanese and American children. The increasing retardation may indicate a negative selection of the older children, or it might be due to the fact that beyond a certain point there is no special value to the Japanese in perfecting their mastery of the language. In as much as neither the Binet nor Beta tests indicate any lessening capacity among the older children, the latter explanation seems the more probable.

The constant superiority of the Japanese in spelling is somewhat startling, but if Darsie's inference, based on Beta results, that "Japanese excel in types of learning demanding acute visual perception and sustained attention," is correct, their superiority in spelling is easy to understand as spelling depends largely upon these capacities.

In Porteus' study of the freshman students at the University of Hawaii, he finds that the scholastic ratings of the students for the freshman year rank
Japanese first and Anglo-Saxon second. Porteus 10 says, referring to scholastic ranks, "It is evident that the Japanese persistence and determination to succeed were standing them in good stead."

CHAPTER III
PRESENTATION OF THE DATA

In this chapter the Japanese and Americans will be compared in their respective classes and not as a total group in the school. All the tests were given to the students at the time of their entrance in the freshman year with the exception of the Clinton General Vocabulary Test. The questionnaire on the personal data was given the second semester, 1933-34.

This chapter will be divided into two sections. The first dealing with the various tests, and the second dealing with the responses on the questionnaire.

The author will attempt to throw some light on the relative strength and weaknesses of the racial groups in their respective classes as measured by the tests given. It is hoped that the results of this study will be of assistance in the instructional phases of the school and will tend to bring about a better understanding of the abilities of the groups compared.

In the senior class, the Japanese and Americans will be compared in Intelligence, Vocabulary, Reading, School Marks, Chronological age, Mental age, and Elimination or Drop-out. The I.Q.'s were computed from Table I and Table II which show the I.Q. distributions of the Japanese and American students by class.
TABLE I

Showing the Distribution of Intelligence Quotients of Japanese Students.

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>120-124</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>115-119</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>110-114</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>105-109</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>100-104</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>95-99</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>90-94</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>85-89</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>80-84</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>75-79</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>70-74</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65-69</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>60-64</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>18</td>
<td>31</td>
<td>31</td>
<td>96</td>
</tr>
</tbody>
</table>
TABLE II

Showing the Distribution of Intelligence Quotients of American Students

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>120-124</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>115-119</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>110-114</td>
<td>13</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>105-109</td>
<td>12</td>
<td>7</td>
<td>16</td>
<td>16</td>
<td>51</td>
</tr>
<tr>
<td>100-104</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>95-99</td>
<td>4</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>90-94</td>
<td>2</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>85-89</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>80-84</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>45</td>
<td>56</td>
<td>62</td>
<td>206</td>
</tr>
</tbody>
</table>
In comparing the I.Q.'s of the Americans and Japanese, the interpretations will be taken from Table III showing comparative measures of the Japanese and Americans in I.Q.'s.

**TABLE III**

<table>
<thead>
<tr>
<th>Measures</th>
<th>American</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>108.6 ± .675</td>
<td>105.6 ± 1.19</td>
</tr>
<tr>
<td>S.D.</td>
<td>6.75 ± .478</td>
<td>7.05 ± .84</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>1.36</td>
<td>6.69</td>
</tr>
<tr>
<td>V.</td>
<td>6.05</td>
<td>6.961</td>
</tr>
</tbody>
</table>

The mean I.Q. of the American senior class is 108.60 with a standard deviation of 6.57 which means that 68.26% of the cases fall between ±1σ or 102.03 and 115.17. The probable error of the standard deviation is .478. The probable error of the mean is found to be .675. The chances are even that the obtained mean of 108.60 does not differ from the true mean by more than ±.675. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 107.925 and 109.275.

The Japanese in the senior class obtained a mean I.Q. score of 105.60 with a standard deviation of 7.05 which means that 68.26% of the cases fall between ±1σ or
between 98.55 and 112.65. The probable error of the standard deviation is .84. The probable error of the mean is 1.19. The chances are even, that the obtained mean of 108.60 does not differ from the true mean by more than 1.19. In 50% of the chances, the true mean lies between the limits of 1 P.E. or between 104.41 and 106.79.

The probable error of the difference of the means is 1.36 for the American and Japanese seniors. The true difference is 3 which favors the American group. There are 93 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the means is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 6.05 and 6.69 for the Japanese. Expressed as a percentage, it is found that the Japanese seniors are 17% more variable in intelligence than the American seniors.

In comparing the vocabulary scores of the American and Japanese seniors, the interpretations will be taken from Table IV showing comparative measures of the Americans and Japanese in vocabulary on the Inglis English Vocabulary Test.
TABLE IV


<table>
<thead>
<tr>
<th>Measures</th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>40.63 ± 1.81</td>
<td>34.56 ± 1.42</td>
</tr>
<tr>
<td>S.D.</td>
<td>17.45 ± 1.28</td>
<td>8.45 ± 1.00</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>2.30</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>43</td>
<td>24</td>
</tr>
</tbody>
</table>

On the Inglis English Vocabulary Test, the American seniors obtained a mean score of 40.63 with a standard deviation of 17.45 which means that 68.26% of the cases fall between ±1σ or between 23.18 and 68.08. The probable error of the standard deviation is 1.28. The probable error of the mean is found to be 1.81. The chances are even that the obtained mean 40.63 does not differ from the true mean by more than ±1.81. In 50% of the chances the true mean lies between the limits of ±1P.E. or between 38.82 and 42.44.

The coefficient of correlation as shown in Table V between I.Q. and the Inglis Vocabulary Test score is .63 with a probable error of .06. Since the coefficient of correlation is more than 4 times the P.E., there is a
significant relationship between I.Q. and vocabulary for the American seniors.

The Japanese students in the senior class obtained a mean score of 34.56 on the Inglis Vocabulary Test with a standard deviation of 8.45 which means that 68.26% of the cases fall between ±1σ or between 26.11 and 43.01. The probable error of standard deviation is 1.00. The probable error of the mean is found to be 1.42. The chances are even that the obtained mean of 34.56 does not differ from the true mean by more than ±1.42. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 33.14 and 35.98.

TABLE V

<table>
<thead>
<tr>
<th>American Vocabulary I.Q.</th>
<th>Japanese Vocabulary I.Q.</th>
</tr>
</thead>
<tbody>
<tr>
<td>.63±.06</td>
<td>.26±.16</td>
</tr>
</tbody>
</table>

The correlation coefficient as shown in Table V between I.Q. and vocabulary for the Japanese seniors is .26 with a probable error of .16. Since the coefficient of correlation is not 4 times the probable error of the "r", there is not a significant relationship between
I.Q. and vocabulary for the Japanese seniors.

The probable error of the difference of the means for the Americans and Japanese in vocabulary is 2.30. The true difference is 6.07 which favors the American group. There are 96 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the mean is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 43 and 24 for the Japanese. Expressed as a percentage, it is found that the Americans are 75% more variable than the Japanese in vocabulary.

The senior class was also tested by the Clinton General Vocabulary Test and comparison will be made between the Americans and Japanese on this test. The interpretations will be taken from Table VI showing comparative measures of the Americans and Japanese in vocabulary on the Clinton General Vocabulary Test.
**TABLE VI**

Showing Comparative Measures of the American and Japanese on the Clinton General Vocabulary Test.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>67.28 ± 2.16</td>
<td>68.8 ± 2.36</td>
</tr>
<tr>
<td>S.D.</td>
<td>21.00 ± 1.53</td>
<td>13.57 ± 1.67</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>3.19</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>31</td>
<td>20</td>
</tr>
</tbody>
</table>

The American seniors obtained a mean of 67.28 with a standard deviation of 21.00, which means that 68.26% of the cases fall between ±1σ or between 46.28 and 88.28. The probable error of the standard deviation is 1.53. The probable error of the mean was found to be 2.16. The chances are even that the obtained mean of 67.28 does not differ from the true mean by more than ±2.16. In 50% of the chances the true average lies between the limits of ±1 P.E. or between 65.12 and 69.44.

A coefficient of correlation for the American seniors between I.Q. and the Clinton Vocabulary Test was found to be .59 with a probable error of .07. Since the correlation coefficient is more than 4 times the P.E., there is a significant relationship between I.Q. and vocabulary for the American seniors.
The Japanese obtained a mean of 68.8 on this vocabulary test with a standard deviation of 13.57 which means that 68.26% of the cases fall between ±1σ or between 55.23 and 82.37. It is noted that the Japanese tend to group themselves nearer to the central tendency on this test than the Americans. The probable error of the standard deviation is 1.67. The probable error of the mean is 2.36. The chances are even, the obtained mean of 68.8 does not differ from the true mean by more than ±2.36. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 66.44 and 71.16.

The coefficient of correlation as shown in Table VII for the Japanese seniors is .36 with a probable error of .15. Since the coefficient of correlation is not 4 times the probable error of "r", it indicates that there is not a significant relationship between Japanese I.Q. and vocabulary.

### TABLE VII

<table>
<thead>
<tr>
<th></th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.59 ± .07</td>
<td>.36 ± .15</td>
</tr>
</tbody>
</table>

Showing the Correlation Coefficients and the Probable error of Correlation Coefficients between I.Q. and Vocabulary (Clinton) of the American and Japanese Seniors.
In comparing the probable error of the difference of the mean for the Americans and Japanese in vocabulary it is found to be 3.19 while the true difference is 1.52 favoring the Japanese group. There are 62 chances out of 100 that the reliable difference is greater than zero. This is not significantly reliable since the differences of the means is not 4 times the probable error of the difference of the means. Comparing the coefficients of variation of the groups, they are found to be 31 for the Americans and 20 for the Japanese. Expressed as a percentage, it is found that the Americans are 58% more variable than the Japanese in the Clinton Vocabulary Test.

In comparing the reading scores of the American and Japanese seniors, the interpretations will be taken from Table VIII showing comparative measures of the Americans and Japanese in reading on the Thorndike-McCall Reading Scale.

**TABLE VIII**

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Reading</th>
<th>Japanese Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>64.93 ± 1.01</td>
<td>56.87 ± 1.07</td>
</tr>
<tr>
<td>S.D.</td>
<td>9.72 ± .72</td>
<td>6.34 ± .76</td>
</tr>
<tr>
<td>P.E.dif. of means</td>
<td></td>
<td>1.47</td>
</tr>
<tr>
<td>V.</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>
The American senior class obtained a mean score of 64.93 in reading with a standard deviation of 9.72 which means that 68.26% of the cases fall between ±1σ or between 55.21 and 74.65. The probable error of the standard deviation is .72. The probable error of the mean is 1.01. The chances are even that the obtained mean of 64.93 does not differ from the true mean by more than ±1.01. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 63.92 and 65.94. The coefficient of correlation for the American seniors between I.Q. and the Thorndike-McCall Reading Scale score is .35 with a probable error of .09. Since the coefficient of correlation is not 4 times the probable error of "r", there is not a significant relationship between reading and I.Q. for this group.

The Japanese obtained a mean score of 56.87 with a standard deviation of 6.34 which means that 68.26% of the cases fall between ±1σ or between 50.53 and 63.21. The probable error of standard deviation is .76. The probable error of the mean is found to be 1.07. The chances are even, the obtained mean of 56.87 does not differ from the true mean by more than ±1.07. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 55.8 and 57.94.

The correlation coefficient as shown in Table IX between I.Q. and reading for the Japanese seniors is
found to be .34 with a probable error of .14. This is not a significant relationship since the coefficient of correlation is not 4 times the probable error of "r".

TABLE IX

Showing the Correlation Coefficients and the Probable Error of Correlation Coefficients between I.Q. and Reading of the American and Japanese Senior Classes.

<table>
<thead>
<tr>
<th></th>
<th>American</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>.35 ± .09</td>
<td>.34 ± .14</td>
</tr>
<tr>
<td>I.Q.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparing the American and Japanese seniors on the Thorndike-McCall Reading Scale in terms of the probable error of the difference of the means, it is found that the probable error of the difference of the means is 1.47 while the true difference is 8.06. Since the true difference is greater than 4 times the probable error of the difference, it is found that in 100% of the chances the difference would be greater than zero in favor of the Americans. This indicates a reliable difference favoring the American seniors in reading ability, which indicates a reading handicap for the Japanese seniors.

In comparing the American and Japanese seniors in reading in terms of the coefficient of variability, it is found that the American coefficient is 15 and 11 for
the Japanese. Expressed as a percentage it is found that
the Americans are 34% more variable than the Japanese in
reading.

Before comparing the school marks it will be necessary
to explain how they were derived. A mark of "A" was given
3 grade points; "B" = 2; "C" = 1; "D" = 0; "E" = -1 and
"F" = -1. The average grade for each individual was found
by dividing the total grade points by the number of courses
taken and the result was multiplied by 100.

In comparing the school marks of the American and
Japanese seniors, the interpretations will be taken from
Table X showing comparative measures of the American and
Japanese seniors in school marks.

TABLE X

Showing Comparative Measures of the American and
Japanese Senior in School Marks.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>132.79 ± 4.06</td>
<td>186.97 ± 4.60</td>
</tr>
<tr>
<td>S.D.</td>
<td>39.49 ± 2.87</td>
<td>27.30 ± 3.25</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td></td>
<td>5.13</td>
</tr>
<tr>
<td>V.</td>
<td>29</td>
<td>15</td>
</tr>
</tbody>
</table>
The mean school mark for the American senior class is 132.79 with a standard deviation of 39.49 which means that 68.26% of the cases fall between ±1σ or between 93.30 and 172.28. The probable error of the standard deviation is 2.87. The probable error of the mean is found to be 4.06. The chances are even that the obtained mean of 132.79 does not differ from the true mean by more than ±4.06. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 128.73 and 136.85.

Comparing the I.Q. and school marks of the American seniors in terms of the coefficient of correlation, it is found as shown in Table XI, to be .47 with a probable error of .08. Since the correlation coefficient is more than 4 times the probable error of the coefficient of correlation, a significant relationship exists between I.Q. and school marks in the American senior class.

The Japanese seniors obtained a mean school mark of 186.37 with a standard deviation of 27.30 which means that 68.26% of the cases fall between ±1σ or between 159.57 and 214.17. The probable error of the standard deviation is 3.25. The probable error of the mean is found to be 4.60. The chances are even that the obtained mean of 186.37 does not differ from the true mean by more than ±4.60. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 182.27 and 191.47.
The correlation coefficient between I.Q. and school marks for the Japanese seniors is found to be .27 with a probable error of .16. Since the correlation coefficient is not 4 times the probable error of "r", a significant relationship does not exist.

**TABLE XI**

Showing the Correlation Coefficient and the Probable Error of Correlation Coefficients between I.Q. and School Marks of the American and Japanese Senior Classes.

<table>
<thead>
<tr>
<th></th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.47 ± .08</td>
<td>.27 ± .16</td>
</tr>
</tbody>
</table>

In comparing the American and Japanese seniors in school marks in terms of the probable error of the difference of the means, it is found that the probable error of the difference is 6.13. The true difference of the means is 54.08 favoring the Japanese. Since the true difference is more than 4 times the probable error of the difference of the means, the difference will be greater than zero in 100% of the chances which indicate a reliable difference between Americans and Japanese in school marks. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 29 and 15 for the Japanese. Expressed
as a percentage, it is found that the Americans are 98% more variable than the Japanese in school marks.

The average chronological age of the Japanese seniors is 18 years, 4.8 months and the average age of the American seniors is 17 years, 10.8 months. It is noted that the Japanese are on an average 6 months older than the Americans in the senior class, but when comparing the mental ages of the groups, it is found that the average mental age for the Americans is 19 years and 1 month while the average mental age for the Japanese is 18 years and 9 months, showing a difference of four months in mental age in favor of the Americans.

In computing the elimination or drop-outs due to unmeasured reasons, it was found that 50% of the Japanese dropped out between the time of grade school graduation and the beginning of their senior year in high school. 44.83% of the Americans were eliminated or dropped out in this period. This seems to indicate greater selectivity among the Japanese seniors than American seniors.
In the junior class the Americans and Japanese will be compared in Intelligence, word meaning, Paragraph meaning, Spelling, Language usage, Vocabulary, School marks, Chronological ages, Mental ages, and Elimination or Drop-out. The I.Q.'s were computed from Table I and Table II showing the I.Q. distributions of the Americans and Japanese students by class.

In comparing the I.Q.'s of the Americans and Japanese, the interpretations will be taken from Table XII showing comparative measures of American and Japanese in I.Q.'s.

TABLE XII

<table>
<thead>
<tr>
<th>Measures</th>
<th>American I.Q.</th>
<th>Japanese I.Q.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>99.52± .92</td>
<td>102.10± 1.37</td>
</tr>
<tr>
<td><strong>S.D.</strong></td>
<td>9.12± .64</td>
<td>10.10±1.13</td>
</tr>
<tr>
<td><strong>P.E.</strong> diff. of means</td>
<td>1.64</td>
<td>1.64</td>
</tr>
<tr>
<td><strong>V.</strong></td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

The mean I.Q. of the American junior class is 99.52 with a standard deviation of 9.12 which means that 68.26% of the cases fall between ±1σ or 90.4 and 108.64. The probable error of the standard deviation is .64. The probable error of the mean is found to be .92. The chances are even that the obtained mean of 99.52 does not differ from the
true mean by more than ± .92. In 50% of the chances, the true mean lies between the limits of ± 1 P.E. or between 98.60 and 100.44.

A mean I.Q. score of 102.1 was obtained by the Japanese in the junior class with a standard deviation of 10.10 which means that 68.26% of the cases fall between ± 1σ or between 92.00 and 112.20. The probable error of the standard deviation is 1.13. The probable error of the mean is 1.37. The chances are even that the obtained mean of 102.10 does not differ from the true mean by more than ± 1.37. In 50% of the chances, the true mean lies between the limits of ± 1 P.E. or between 100.73 and 103.47.

The probable error of the difference of the means is 1.64 for the American and Japanese juniors in I.Q. The true difference is 2.58 which favors the Japanese group. There are 85 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the mean is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 9 and 10 for the Japanese. Expressed as a percentage, it is found that the Japanese juniors are 11% more variable in intelligence than the American juniors.
In comparing the word meaning scores of the American and Japanese juniors, the interpretations will be taken from Table XIII showing comparative measures of the American and Japanese junior classes in word meaning on the Stanford Achievement Test.

### TABLE XIII

**Showing Comparative Measures of the American and Japanese Junior Classes in Word Meaning on the Stanford Achievement Test**.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Word Meaning</th>
<th>Japanese Word Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>89.68 ± 1.52</td>
<td>87.80 ± 1.36</td>
</tr>
<tr>
<td><strong>S.D.</strong></td>
<td>15.16 ± 1.07</td>
<td>8.60 ± .97</td>
</tr>
<tr>
<td><strong>P.E. diff. of means</strong></td>
<td>2.04</td>
<td></td>
</tr>
<tr>
<td><strong>V.</strong></td>
<td>17</td>
<td>10</td>
</tr>
</tbody>
</table>

The mean score in word meaning for the American junior class is 89.68 with a standard deviation of 15.16 which means that 68.26% of the cases fall between ±1σ or between 74.52 and 104.84. The probable error of the standard deviation is 1.07. The probable error of the mean is found to be 1.52. The chances are even that the obtained mean of 89.68 does not differ from the true mean by more than ±1.52. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 88.16 and 91.20.
The coefficient of correlation as shown in Table XIV for the American juniors between I.Q. and word meaning is .59 with a probable error of .07. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and word meaning for the American junior class.

In word meaning, the mean score for the Japanese junior class is 87.80 with a standard deviation of 8.60 which means that 68.26% of the cases fall between ±1σ or between 79.20 and 94.40. The probable error of the standard deviation is .97. The probable error of the mean is found to be 1.36. The chances are even that the obtained mean of 87.80 does not differ from the true mean by more than ±1.36. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 86.44 and 89.16.

As shown in Table XIV, the coefficient of correlation for the Japanese juniors between I.Q. and word meaning is .50 with a probable error of .12. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and word meaning for the Japanese junior class.
TABLE XIV

Showing Correlation Coefficients and the Probable Error of the Correlation Coefficient between I.Q. and Word Meaning of the American and Japanese Junior Classes.

<table>
<thead>
<tr>
<th></th>
<th>American Word Meaning</th>
<th>Japanese Word Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.59 ± .07</td>
<td>.50 ± .12</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 2.04 for the American and Japanese juniors. The true difference of the means is 1.88 which favors the American group. There are 73 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the mean is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 17 and 10 for the Japanese. Expressed as a percentage, it is found that the American juniors are 70% more variable in word meaning than the Japanese juniors.

In comparing the scores in paragraph meaning of the American and Japanese juniors, the interpretations will be taken from Table XV showing comparative measures of the American and Japanese junior classes in paragraph meaning.
on the Stanford Achievement Test.

**TABLE XV**

Showing Comparative Measures of the American and Japanese Junior Classes in Paragraph Meaning on the Stanford Achievement Test.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Paragraph Meaning</th>
<th>Japanese Paragraph Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>92.40±1.43</td>
<td>87.80±1.76</td>
</tr>
<tr>
<td>S.D.</td>
<td>14.12±1.00</td>
<td>11.10±1.24</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>2.47</td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>15</td>
<td>13</td>
</tr>
</tbody>
</table>

The mean score in paragraph meaning of the American junior class is 92.40 with a standard deviation of 14.12 which means that 68.26% of the cases fall between ±1σ or 78.28 and 106.52. The probable error of the standard deviation is 1.00. The probable error of the mean is found to be 1.43. The chances are even that the obtained mean of 92.4 does not differ from the true mean by more than ±1.43. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 90.97 and 93.83.

The coefficient of correlation as shown in Table XVI for the American juniors between I.Q. and paragraph meaning is .66 with a probable error of .06. Since the coefficient of correlation is more than 4 times the probable of "r",
there is a significant relationship between I.Q. and paragraph meaning for the American junior class.

A mean score in paragraph meaning of 87.80 was obtained by the Japanese in the junior class with a standard deviation of 11.10 which means that 68.26% of the cases fall between ±1σ or 76.7 and 98.9. The probable error of the standard deviation is 1.24. The probable error of the mean is found to be 1.76. The chances are even that the obtained mean of 87.8 does not differ from the true mean by more than ±1.76. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 86.04 and 89.56.

The coefficient of correlation as shown in Table XVI for the Japanese juniors between I.Q. and paragraph meaning is .68 with a probable error of .09. Since the coefficient of correlation is more than 4 times the probable error of "r", this is a significant relationship between I.Q. and paragraph meaning for the Japanese junior class.

**TABLE XVI**

<table>
<thead>
<tr>
<th></th>
<th>American Paragraph Meaning</th>
<th>Japanese Paragraph Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.66 ± .06</td>
<td>.68 ± .09</td>
</tr>
</tbody>
</table>
The probable error of the difference of the means in paragraph meaning is 2.47 for the American and Japanese juniors. The true difference is 4.60 which favors the American group. There are 89 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the means is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 15 and 13 for the Japanese. Expressed as a percentage, it is found that the American juniors are 15% more variable in paragraph meaning than the Japanese juniors.

In comparing the scores in spelling of the American and Japanese juniors, the interpretations will be taken from Table XVII showing comparative measures of the American and Japanese junior classes in spelling on the Stanford Achievement Test.

**Table XVII**

**Showing Comparative Measures of the American and Japanese Junior Classes in Spelling on the Stanford Achievement Test.**

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Spelling</th>
<th>Japanese Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>77.90±1.85</td>
<td>80.80±1.51</td>
</tr>
<tr>
<td>S.D.</td>
<td>18.36±1.31</td>
<td>9.50±1.06</td>
</tr>
<tr>
<td>P.E.</td>
<td>2.38</td>
<td></td>
</tr>
<tr>
<td>diff. of means</td>
<td></td>
<td>12.12</td>
</tr>
<tr>
<td>V.</td>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>
The mean spelling score of the American junior class is 77.90 with a standard deviation of 18.36 which means that 68.26% of the cases fall between \( \pm 1\sigma \) or 59.54 and 96.26. The probable error of the standard deviation is 1.31. The probable error of the mean is found to be 1.85. The chances are even that the obtained mean of 77.90 does not differ from the true mean by more than \( \pm 1.85 \). In 50% of the chances, the true mean lies between the limits of \( \pm 1 \) P.E. or between 76.05 and 79.75.

The coefficient of correlation as shown in Table XVIII for the American juniors between I.Q. and spelling is 0.61 with a probable error of 0.06. Since the coefficient of correlation is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and spelling for the American junior class.

A mean spelling score of 80.80 was obtained by the Japanese in the junior class with a standard deviation of 9.50 which means that 68.26% of the cases fall between \( \pm 1\sigma \) or between 71.30 and 90.30. The probable error of the standard deviation is 1.06. The probable error of the mean is found to be 1.51. The chances are even that the obtained mean of 80.80 does not differ from the true mean by more than \( \pm 1.51 \). In 50% of the chances, the true mean lies between the limits of \( \pm 1 \) P.E. or between 79.29 and 82.31.

The coefficients of correlation as shown in Table XVIII
for the Japanese juniors between I.Q. and spelling is .63 with a probable error of .10. Since the coefficient of correlation is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and spelling for the Japanese junior class.

**TABLE XVIII**

<table>
<thead>
<tr>
<th></th>
<th>American Spelling</th>
<th>Japanese Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.61 ± .06</td>
<td>.63 ± .10</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 2.38 for the American and Japanese juniors in spelling. The true difference is 2.90 which favors the Japanese group. There are 79 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the means is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 24 and 12 for the Japanese. Expressed as a percentage, it is found that the American juniors are 100% more variable than the Japanese juniors in spelling.
In comparing the scores in language usage of the American and Japanese juniors, the interpretations will be taken from Table XIX showing comparative measures of the American and Japanese junior classes in language usage on the Stanford Achievement Test.

**TABLE XIX**

**Showing Comparative Measures of the American and Japanese Junior Classes in Language Usage on the Stanford Achievement Test.**

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Language Usage</th>
<th>Japanese Language Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>89.83 ± 2.00</td>
<td>94.80 ± 1.98</td>
</tr>
<tr>
<td>S.D.</td>
<td>19.90 ± 1.41</td>
<td>12.50 ± 1.40</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>22</td>
<td>13</td>
</tr>
</tbody>
</table>

The mean language usage score of the American junior class is **89.83** with a standard deviation of **19.90** which means that 68.26% of the cases fall between ±1σ or 69.93 and 109.73. The probable error of the standard deviation is **1.41**. The probable error of the mean is found to be **2.00**. The chances are even that the obtained mean of **89.83** does not differ from the true mean by more than ±2.00. In 50% of the chances, the true mean lies between ±1 P.E. or between **87.83** and **91.83**.
The coefficient of correlation as shown by Table XX for the American juniors between I.Q. and language usage is .67 with a probable error of .06. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and language usage for the American junior class.

A mean language usage score of 94.80 was obtained by the Japanese in the junior class with a standard deviation of 12.50 which means that 68.26% of the cases fall between ±1 or 82.3 and 107.3. The probable error of the standard deviation is 1.40. The probable error of the mean is 1.98. The chances are even that the obtained mean of 94.80 does not differ from the true mean by more than ±1.98. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 92.82 and 96.78.

The coefficient of correlation as shown by Table XX for the Japanese juniors between I.Q. and language usage is .69 with a probable error of .08. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and language usage for the Japanese junior class.

**TABLE XX**

**Showing Correlation Coefficients and the Probable Error of the Correlation Coefficients between I.Q. and Language Usage of the American and Japanese Junior Classes.**

<table>
<thead>
<tr>
<th></th>
<th>American Language Usage</th>
<th>Japanese Language Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.67± .06</td>
<td>.69± .08</td>
</tr>
</tbody>
</table>
The probable error of the difference of the mean is 2.81 for the American and Japanese juniors in language usage. The true difference is 4.97 which favors the Japanese. There are 88 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the means is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 22 and 13 for the Japanese. Expressed as a percentage, it is found that the American juniors are 69% more variable in language usage than the Japanese juniors.

In comparing the American and Japanese junior classes in vocabulary, the interpretations will be taken from Table XXI showing comparative measures of the American and Japanese juniors in vocabulary on the Clinton General Vocabulary Test.

**TABLE XXI**

*Showing Comparative Measures of the American and Japanese Juniors in Vocabulary on the Clinton General Vocabulary Test.*

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>61.32 ± 2.75</td>
<td>53.80 ± 1.54</td>
</tr>
<tr>
<td>S.D.</td>
<td>23.85 ± 1.94</td>
<td>9.70 ± 1.10</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>3.15</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>39</td>
<td>18</td>
</tr>
</tbody>
</table>
The mean vocabulary score of the American junior class is 61.32 with a standard deviation of 23.85 which means that 68.26% of the cases fall between $\pm 1\sigma$ or 37.47 and 85.17. The probable error of the standard deviation is 1.94. The probable error of the mean is found to be 2.75. The chances are even that the obtained mean of 61.32 does not differ from the true mean by more than $\pm 2.75$. In 50% of the chances, the true mean lies between the limits of $\pm 1$ P.E. or between 58.57 and 64.07.

The coefficient of correlation as shown by Table XXII for the American juniors between I.Q. and vocabulary is .54 with a probable error of .08. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and vocabulary for the American junior class.

The mean vocabulary score for the Japanese juniors is 53.8 with a standard deviation of 9.70 which means that 68.26% of the cases fall between $\pm 1\sigma$ or 44.10 and 63.50. The probable error of the standard deviation is 1.10. The probable error of the mean is found to be 1.54. The chances are even that the obtained mean of 53.80 does not differ from the true mean by more than $\pm 1.54$. In 50% of the chances, the true mean lies between the limits of $\pm 1$ P.E. or between 52.26 and 55.34.

The coefficient of correlation as shown by Table XXII
for the Japanese juniors between I.Q. and vocabulary is .66 with a probable error of .09. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and vocabulary for the Japanese junior class.

TABLE XXII

Showing Correlation Coefficients and the Probable Error of the Correlation Coefficients between I.Q. and Vocabulary of the American and Japanese Junior Classes.

<table>
<thead>
<tr>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q. .54±.06</td>
<td>I.Q. .66±.09</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 3.15 for the American and Japanese juniors in vocabulary. The true difference is 7.42 which favors the American groups. There are 94 chances out of 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the means is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 39 and 18 for the Japanese group. Expressed as a percentage, it is found that the American juniors are 115% more variable in vocabulary than the Japanese juniors.
In comparing the American and Japanese junior classes in terms of school marks, the interpretations will be taken from Table XXIII showing comparative measures of the American and Japanese juniors in school marks.

**TABLE XXIII**

Showing Comparative Measures of the American and Japanese Juniors in School Marks.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>113.55±2.05</td>
<td>160.60±6.81</td>
</tr>
<tr>
<td>S.D.</td>
<td>20.40±1.45</td>
<td>42.80±4.81</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>7.11</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>18</td>
<td>27</td>
</tr>
</tbody>
</table>

The mean school marks of the American junior class is 113.55 with a standard deviation of 20.40 which means that 68.26% of the cases fall between ±1σ or 93.15 and 133.95. The probable error of the standard deviation is 1.45. The probable error of the mean is found to be 2.05. The chances are even that the obtained mean of 113.55 does not differ from the true mean by more than ±2.05. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 111.50 and 115.60.

The coefficient of correlation as shown by Table XXIV for the American juniors between I.Q. and school marks is
.79 with a probable error of .04. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and school marks for the American juniors.

A mean school mark of 160.60 was obtained by the Japanese juniors with a standard deviation of 42.80 which means that 68.26% of the cases fall between ±1σ or between 117.8 and 203.4. The probable error of the standard deviation is 4.81. The probable error of the mean is found to be 6.81. The chances are even, the obtained mean of 160.60 does not differ from the true mean by more than ±6.81. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 153.79 and 167.41.

The coefficient of correlation as shown by Table XXIV for the Japanese juniors between I.Q. and school marks is .77 with a probable error of .07. Since the coefficient of correlation is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and school marks for the Japanese junior class.

TABLE XXIV

<table>
<thead>
<tr>
<th></th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.79 ± .04</td>
<td>.77 ± .07</td>
</tr>
</tbody>
</table>
The probable error of the difference of the means is 7.11 for the American and Japanese juniors in school marks. The true difference is 47.05 which favors the Japanese. There are 100 chances out of 100 that the reliable difference is greater than zero. This difference is significantly reliable since the difference of the means is more than 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 18 and 27 for the Japanese group. Expressed as a percentage, it is found that the Japanese juniors are 50% more variable in school marks than the American juniors.

The average chronological age of the Japanese juniors is 17 years, 8 months and the average age of the American juniors is 17 years, 4 months. It is noted that the Japanese juniors are on an average 4 months older than the American juniors, but when comparing the mental ages of the groups, it is found that the average mental age for the Americans is 17 years, 3 months while the average mental age for the Japanese is 17 years, 9 months, showing a difference of 6 months in mental age in favor of the Japanese.

In computing the elimination or drop-outs due to unmeasured reasons, it was found that 41.94% of the Japanese dropped out between the time of grade school graduation.
and the beginning of their junior year in high school. 46.92% of the Americans were eliminated or dropped out in this period. This may indicate a greater selectivity among the American juniors than the Japanese juniors.
In the sophomore class, the American and Japanese will be compared in Intelligence, Vocabulary, Reading, School Marks, Chronological ages, Mental ages, and Elimination or Drop-out. The I.Q.'s were computed from Table I and Table II showing the I.Q. distributions of the American and Japanese students by classes.

In comparing the I.Q.'s of the American and Japanese sophomores, the interpretations will be taken from Table XXV showing comparative measures of American and Japanese sophomores in I.Q.'s.

**TABLE XXV**

Showing Comparative Measures of American and Japanese Sophomores in Intelligence Quotients.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American I.Q.</th>
<th>Japanese I.Q.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>104.04 ± .88</td>
<td>101.03 ± 1.33</td>
</tr>
<tr>
<td>S.D.</td>
<td>9.78 ± .62</td>
<td>11.00 ± .94</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>1.59</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

The mean I.Q. of the American sophomore class is 104.04 with a standard deviation of 9.78 which means that 68.26% of the cases fall between ±1σ or between 94.26 and 113.82. The probable error of the standard deviation is .62. The probable error of the mean is found to be .88. The chances are even that the obtained mean of 104.04 does
not differ from the true mean by more than ±.88. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 103.16 and 104.92.

A mean I.Q. score of 101.03 was obtained by the Japanese in the sophomore class with a standard deviation of 11.00 which means that 68.26% of the cases fall between ±1σ or between 90.03 and 112.03. The probable error of the standard deviation is .94. The probable error of the mean is 1.33. The chances are even that the obtained mean of 101.03 does not differ from the true mean by more than ±1.33. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 99.70 and 102.36.

The probable error of the difference of the means is 1.59 for the American and Japanese sophomore classes in I.Q. The true difference is 3.01 which favors the American group. There are 80 chances in 100 that the reliable difference is greater than zero. This is not wholly significantly reliable since the difference of the means is not 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 9 and 11 for the Japanese group. Expressed as a percentage, it is found that the Japanese sophomores are 22% more variable in intelligence than the American sophomores.

In comparing the vocabulary of the American and
Japanese sophomores, the interpretations will be taken from Table XXVI showing comparative measures of the American and Japanese sophomore classes in vocabulary on the Clinton General Vocabulary Test.

**TABLE XXVI**

Showing Comparative Measures of the American and Japanese Sophomore Classes in Vocabulary on the Clinton General Vocabulary Test.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>51.93 ± 1.34</td>
<td>52.46 ± 2.11</td>
</tr>
<tr>
<td>S.D.</td>
<td>14.36 ± .95</td>
<td>14.48 ± 1.49</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>2.49</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>28</td>
<td>28</td>
</tr>
</tbody>
</table>

The mean score in vocabulary for the American sophomore class is 51.93 with a standard deviation of 14.36 which means that 68.26% of the cases fall between ±1σ or between 37.57 and 66.29. The probable error of the standard deviation is .95. The probable error of the mean is 1.34. The chances are even that the obtained mean of 51.93 does not differ from the true mean by more than ±1.34. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 50.59 and 53.27.

The coefficient of correlation as shown in Table XXVII for the American sophomores between I.Q. and vocabulary is .53 with a probable error of .07. Since the coefficient of correlation is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and
vocabulary for the American sophomore class.

In vocabulary, the mean score for the Japanese sophomore class is 52.46 with a standard deviation of 14.48 which means that 68.26% of the cases fall between ±1σ or between 37.98 and 66.94. The probable error of the standard deviation is 1.49. The probable error of the mean is found to be 2.11. The chances are even that the obtained mean of 52.46 does not differ from the true mean by more than 2.11. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 50.35 and 54.57.

As shown by Table XXVII, the coefficient of correlation for the Japanese sophomores between I.Q. and vocabulary is .65 with a probable error of .07. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and vocabulary for the Japanese sophomores.

**TABLE XXVII**

<table>
<thead>
<tr>
<th></th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.53 ± .07</td>
<td>.65 ± .07</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 2.49 for the American and Japanese sophomores. The
true difference of the means is .53 which favors the
Japanese group. There are 55 chances out of 100 that the
reliable difference is greater than zero. This is not
wholly significantly reliable since the difference of
the mean is not 4 times the probable error of the differ-
ence of the means. In comparing the coefficients of
variation of the groups, the writer finds that the
coefficient of variation of the American group is 28 and
28 for the Japanese group. It is found that both groups
are equally variable in vocabulary.

In comparing the American and Japanese sophomore
classes in terms of reading, the interpretations will be
taken from Table XXVIII showing comparative measures of
American and Japanese sophomores in reading on the
Thorndike-McCall Reading Scale.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Reading</th>
<th>Japanese Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>55.90±.75</td>
<td>49.14±.92</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.66±.53</td>
<td>7.48±.65</td>
</tr>
<tr>
<td>P.E. of diff. of means</td>
<td>1.18</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>16</td>
<td>15</td>
</tr>
</tbody>
</table>
The mean reading score of the American sophomore class is 55.90 with a standard deviation of 8.66 which mean that 68.26% of the cases fall between $\pm 1\sigma$ or between 47.24 and 64.56. The probable error of the standard deviation is .53. The probable error of the mean is .75. The chances are even that the obtained mean of 55.90 does not differ from the true mean by more than $\pm .75$. In 50% of the chances, the true mean lies between the limits of $\pm 1$ P.E. or between 55.15 and 56.65.

The coefficient of correlation as shown in Table XXIX for the American sophomores between I.Q. and reading is .76 with a probable error of .04. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and reading for the American sophomore class.

In reading, the mean score for the Japanese sophomore class is 49.14 with a standard deviation of 7.48 which means that 68.26% of the cases fall between $\pm 1\sigma$ or between 41.66 and 56.62. The probable error of the standard deviation is .65. The probable error of the mean is found to be .92. The chances are even that the obtained mean of 49.14 does not differ from the true mean by more than $\pm .92$. In 50% of the chances the true mean lies between the limits of $\pm 1$ P.E. or between 48.22 and 50.06.

As shown in Table XXIX, the coefficient of correlation
for the Japanese sophomores between I.Q. and reading is .84 with a probable error of .04. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and reading for the Japanese sophomore class.

TABLE XXIX

Showing Correlation Coefficients and the Probable Error of the Correlation Coefficients between I.Q. and Reading of the American and Japanese Sophomore Classes.

<table>
<thead>
<tr>
<th></th>
<th>American Reading</th>
<th>Japanese Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.76±.04</td>
<td>.84±.04</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 1.18 for the American and Japanese sophomores while the true difference of the means is 6.76 which favors the American group. There are 100 chances out of 100 that the reliable difference is greater than zero since the true difference is more than 4 times the probable error of the difference. This indicates a reliable difference in reading ability favoring the American sophomores, showing a reading handicap for the Japanese sophomores.

In comparing the coefficients of variation in reading of the groups, the writer finds that the coefficient of variation of the American group is 16 and 15 for the
Japanese. Expressed as a percentage, it is found that the American sophomores are 6% more variable in reading than the Japanese sophomores.

In comparing the school marks of the American and Japanese sophomores, the interpretations will be taken from Table XXX showing comparative measures of the American and Japanese sophomore classes in school marks.

**TABLE XXX**

Showing Comparative Measures of the American and Japanese Sophomore Classes in School Marks.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>138.75 ± 4.44</td>
<td>164.20 ± 4.71</td>
</tr>
<tr>
<td>S.D.</td>
<td>49.30 ± 3.14</td>
<td>38.90 ± 3.33</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>6.47</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>36</td>
<td>24</td>
</tr>
</tbody>
</table>

The American sophomores obtained a mean school mark of 138.75 with a standard deviation of 49.30 which means that 68.26% of the cases fall between ±1σ or between 139.45 and 138.05. The probable error of the standard deviation is 3.14. The probable error of the mean is 4.44. The chances are even that the obtained mean of 138.75 does not differ from the true mean by more than ±4.44. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 134.31 and 143.19.
The coefficient of correlation as shown in Table XXXI between I.Q. and school marks for the American sophomores is .46 with a probable error of .07. Since the coefficient of correlation is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and school marks for the American sophomores.

The Japanese sophomores obtained a mean school mark of 164.20 with a standard deviation of 38.90 which means that 68.26% of the cases fall between ±1σ or between 125.30 and 203.10. The probable error of the standard deviation is 3.33. The probable error of the mean is 4.71. The chances are even that the obtained mean of 164.20 does not differ from the true mean by more than ±4.71. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 159.49 and 168.91.

The coefficient of correlation as shown in Table XXXI between I.Q. and school marks for the Japanese sophomores is .44 with a probable error of .10. Since the correlation coefficient is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and school marks for the Japanese sophomores.
TABLE XXXI

Showing the Coefficients of Correlation and the Probable Error of the Coefficients of Correlation between I.Q. and School Marks for the American and Japanese Sophomore Classes.

<table>
<thead>
<tr>
<th></th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>0.46 ± 0.07</td>
<td>0.44 ± 0.10</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means for the American and Japanese sophomores in school marks is 6.47. The true difference is 25.45 which favors the Japanese group. There are 99.6 chances out of 100 that the reliable difference is greater than zero. To insure complete reliability, the difference of the means must be 4 times the probable error of the difference of the means. This can be considered a reliable difference. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 36 and 24 for the Japanese group. Expressed as a percentage, it is found that the American sophomores are 50% more variable in school marks than the Japanese sophomores.

The average chronological age of the Japanese sophomores is 16 years, 8 months and the average age of the American sophomores is 16 years, 1 month. It is noted that the Japanese on an average are 7 months older.
than the Americans in the sophomore class, but when comparing the mental ages of the groups, it is found that the average mental age of the Americans is 16 years, 8 months, while the average mental age of the Japanese is 16 years, 9 months, showing a difference of one month in mental age in favor of the Japanese sophomores.

In computing the elimination or drop-outs due to unmeasured reasons, it was found that 36.96% of the Japanese dropped out between the time of grade school graduation and the beginning of their sophomore year in high school. 34.62% of the Americans were eliminated or dropped out during this period. This seems to indicate a greater selectivity among the Japanese sophomores than American sophomores.
In the freshman class the Americans and Japanese will be compared in Intelligence, Vocabulary, Reading, School Marks, Chronological ages, Mental ages and Elimination or Drop-out. The I.Q.'s were computed from Table I and Table II which show the I.Q. distributions of the American and Japanese students by classes.

In comparing the I.Q.'s of the American and Japanese freshman, the interpretations will be taken from Table XXXII showing comparative measures of the American and Japanese freshman in I.Q.'s.

**TABLE XXXII**

*Showing Comparative Measures of American and Japanese Freshmen in Intelligence Quotients.*

<table>
<thead>
<tr>
<th>Measures</th>
<th>American I.Q.</th>
<th>Japanese I.Q.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>101.74± .73</td>
<td>90.56± 1.05</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.56± .52</td>
<td>8.70± .74</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td></td>
<td>1.27</td>
</tr>
<tr>
<td>V.</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

The mean I.Q. of the American freshmen class is 101.74 with a standard deviation of 8.56 which means that 68.26% of the cases fall between ±1σ or between 93.18 and 110.30. The probable error of the standard deviation is .52. The probable error of the mean is found to be .73. The chances
are even that the obtained mean of 101.74 does not differ from the true mean by more than ±.73. In 50% of the chances the true mean lies between the limits of ±1 P.E. or between 101.01 and 102.47.

A mean I.Q. of 90.56 was obtained by the Japanese freshmen with a standard deviation of 8.70 which means that 68.26% of the cases fall between ±1σ or between 81.86 and 99.26. The probable error of the standard deviation is .74. The probable error of the mean is 1.05. The chances are even that the obtained mean of 90.56 does not differ from the true mean by more than ±1.05. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 89.51 and 91.61.

The probable error of the difference of the means is 1.27 for the American and Japanese freshmen in I.Q.'s. The true difference is 11.18 which favors the American group. There are 100 chances out of 100 that the reliable difference is greater than zero. This is a reliable difference since the difference of the means is more than 4 times the probable error of the difference of the means.

In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 8 and 10 for the Japanese group. Expressed as a percentage, it is found that the Japanese freshmen are 25% more variable than the American freshmen.
In comparing the vocabulary scores of the American and Japanese freshmen, the interpretations will be taken from Table XXXIII showing comparative measures of the American and Japanese freshmen in vocabulary on the Clinton General Vocabulary Test.

**TABLE XXXIII**

Showing Comparative Measures of American and Japanese Freshmen in Vocabulary on the Clinton General Vocabulary Test.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>50.60 ± 1.27</td>
<td>40.70 ± 1.09</td>
</tr>
<tr>
<td>S.D.</td>
<td>14.68 ± .90</td>
<td>8.25 ± .77</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>1.67</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>29</td>
<td>20</td>
</tr>
</tbody>
</table>

On the Clinton General Vocabulary Test, the American freshman obtained a mean score of 50.60 with a standard deviation of 14.68 which means that 68.26% of the cases fall between ±1σ or 35.92 and 65.28. The probable error of the standard deviation is .90. The probable error of the mean is found to be 1.27. The chances are even that the obtained mean of 50.60 does not differ from the true mean by more than ±1.27. In 50% of the chances, the true average lies between the limits of ±1 P.E., or between 49.33 and 51.87.
The coefficient of correlation as shown in Table XXXIV for the American freshmen between I.Q. and the Clinton Vocabulary Test score is .49 with a probable error of .07. Since the correlation coefficient is 4 times the probable error of the \( r \), there is a significant relationship between I.Q. and vocabulary for the American freshmen.

The Japanese students in the freshman class obtained a mean score of 40.70 on the Clinton Vocabulary Test with a standard deviation of 8.25 which means that 68.26% of the cases fall between \( \pm 1\sigma \) or between 32.45 and 48.95. The probable error of the standard deviation is .77.

The probable error of the mean is found to be 1.09. The chances are even that the obtained mean of 40.70 does not differ from the true mean by more than \( \pm 1.09 \). In 50% of the chances, the true mean lies between the limits of \( \pm 1 \) P.E. or between 39.61 and 41.79.

The coefficient of correlation as shown in Table XXXIV for the Japanese freshmen between I.Q. and vocabulary is .39 with a probable error of .11. Since the coefficient of correlation is not 4 times the probable error of the "r", there is not a wholly significant relationship between I.Q. and vocabulary for the Japanese freshmen.
TABLE XXXIV

Showing the Correlation Coefficients and the Probable Error of the Correlation Coefficients between I.Q. and Vocabulary (Clinton) of the American and Japanese Freshmen Classes.

<table>
<thead>
<tr>
<th>American Vocabulary</th>
<th>Japanese Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.49 ± 0.07</td>
<td>0.39 ± 0.11</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means for the American and Japanese in vocabulary is 1.67. The true difference is 9.90 which favors the American group. There are 100 chances out of 100 that the reliable difference is greater than zero. The difference is significantly reliable since the difference of the means is more than 4 times the probable error of the difference of the means.

In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American group is 29 and 20 for the Japanese group. Expressed as a percentage, it is found that the American freshmen are 45% more variable than the Japanese freshmen in vocabulary.

In comparing the reading scores of the American and Japanese freshman, the interpretations will be taken from Table XXXV showing comparative measures of the Americans and Japanese in reading on the Iowa Silent Reading Test.
Table XXXV

Showing Comparative Measures of the American and Japanese Freshmen in Reading on the Iowa Silent Reading Test.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American Reading</th>
<th>Japanese Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>58.71±1.89</td>
<td>44.80±1.69</td>
</tr>
<tr>
<td>S.D.</td>
<td>22.10±1.34</td>
<td>13.72±1.19</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td></td>
<td>2.53</td>
</tr>
<tr>
<td>V.</td>
<td>38</td>
<td>31</td>
</tr>
</tbody>
</table>

The American freshmen obtained a mean reading score of 58.71 on the Iowa Silent Reading Test with a standard deviation of 22.10 which means that 68.26% of the cases fall between ±1σ or 36.61 and 80.31. The probable error of the standard deviation is 1.34. The probable error of the mean is found to be 1.89. The chances are even that the obtained mean does not differ from the true mean by more than ±1.89. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 56.82 and 60.60.

A coefficient of correlation of .75 as shown in Table XXXVI with a probable error of .04 is found between I.Q. and reading for the American freshman class. Since the correlation coefficient is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and reading for the American freshmen.

On the Iowa Silent Reading Test, the Japanese freshmen
obtained a mean score of 44.80 with a standard deviation of 13.72 which means that 68.26% of the cases fall between \( \pm 1\sigma \) or 31.08 and 58.52. The probable error of the standard deviation is 1.19. The probable error of the mean is 1.69. The chances are even that the obtained mean of 44.80 does not differ from the true mean by more than \( \pm 1.69 \). In 50% of the chances, the true mean lies between the limits of \( \pm 1 \) P.E. or between 43.11 and 46.49.

The correlation coefficient as shown in Table XXXVI for the Japanese freshmen between I.Q. and reading is .72 with a probable error of .06. Since the coefficient of correlation is more than 4 times the probable error of "r", there is a significant relationship between I.Q. and reading for the Japanese Freshman class.

**TABLE XXXVI**

<table>
<thead>
<tr>
<th></th>
<th>American Reading</th>
<th>Japanese Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.75±.04</td>
<td>.72±.06</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 2.53 for the American and Japanese in reading. The true difference is 13.91 which favors the American group. There are 100 chances out of 100 that the reliable
difference is greater than zero. This is significantly reliable since the difference of the means is more than 4 times the probable error of the difference of the means. In comparing the coefficients of variation of the groups, the writer finds that the coefficient of variation of the American groups is 38 and 31 for the Japanese group. Expressed as a percentage, it is found that the American freshmen are 22.5% more variable than the Japanese freshmen.

In comparing the school marks of the American and Japanese freshmen, the interpretations will be taken from Table XXXVII showing comparative measures of the American and Japanese freshmen in school marks.

**TABLE XXXVII**

Showing Comparative Measures of American and Japanese Freshmen in School Marks.

<table>
<thead>
<tr>
<th>Measures</th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>148.07 ± 3.50</td>
<td>117.66 ± 5.31</td>
</tr>
<tr>
<td>S.D.</td>
<td>40.90 ± 2.48</td>
<td>43.10 ± 3.75</td>
</tr>
<tr>
<td>P.E. diff. of means</td>
<td>6.35</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>28</td>
<td>37</td>
</tr>
</tbody>
</table>

The mean school marks of the American freshman class is 148.07 with a standard deviation of 40.90 which means that 68.26% of the cases fall between ± 1σ or between 107.17 and 188.97. The probable error of the standard
deviation is 2.48. The probable error of the mean is 3.50. The chances are even that the obtained mean of 104.04 does not differ from the true mean by more than ±3.50. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 144.57 and 151.57.

The coefficient of correlation as shown in Table XXXVIII for the American freshmen between I.Q. and school marks is .43 with a probable error of .07. Since the coefficient of correlation is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and school marks for the American freshmen.

In school marks, the mean score of the Japanese freshmen is 117.66 with a standard deviation of 43.10 which means that 68.26% of the cases fall between ±1σ or between 74.56 and 160.76. The probable error of the standard deviation is 3.75. The probable error of the mean is 5.31. The chances are even that the obtained mean of 117.66 does not differ from the true mean by more than ±5.31. In 50% of the chances, the true mean lies between the limits of ±1 P.E. or between 112.35 and 122.94.

As shown by Table XXXVIII the coefficient of correlation for the Japanese freshmen between I.Q. and school marks is .51 with a probable error of .09.
Since the correlation coefficient is more than 4 times the probable error of the "r", there is a significant relationship between I.Q. and school marks for the Japanese freshman class.

**TABLE XXXVIII**

Showing Correlation Coefficients and the Probable Error of the Correlation Coefficients between I.Q. and School Marks of the American and Japanese Freshman Classes.

<table>
<thead>
<tr>
<th></th>
<th>American School Marks</th>
<th>Japanese School Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q.</td>
<td>.43±.07</td>
<td>.51±.09</td>
</tr>
</tbody>
</table>

The probable error of the difference of the means is 6.35 for the American and Japanese freshman classes in school marks. The true difference is 30.41 which favors the American group. There are 100 chances in 100 that the reliable difference is greater than zero. This is significantly reliable since the differences of the means is more than 4 times the probable error of the difference of the means. In comparing the coefficient of variation of the groups, the writer finds that the coefficient of variation of the American group is 28 and 37 for the Japanese group. Expressed as a percentage, it is found that the Japanese freshmen are 32% more variable in school marks than the American freshmen.
The average chronological age of the Japanese freshmen is 15 years, 7 months and the average age of the American freshmen is 14 years, 11 months. It is noted that the Japanese on an average are 8 months older than the Americans in the freshmen class, but when comparing the mental ages of the groups, it is found that the average mental age of the Japanese is 14 years, 3 months, while the average mental age of the Americans is 15 years, 2 months, showing a difference of eleven months in mental age in favor of the American freshman class.

In computing the elimination or drop-outs due to unmeasured reasons, it was found that 14.29% of the Japanese dropped out between the time of grade school graduation and the beginning of their freshman year in high school. 34.45% of the Americans were eliminated or dropped out during this period. This seems to indicate a greater selectivity among the American freshmen than the Japanese freshmen.
The preceding pages of Chapter III deal with the interpretation of the measures as applied to the specific tests given the American and Japanese students in their respective classes. An attempt will be made to point out and discuss the general trends of the groups by class. In order to simplify the discussion of the classes, four comprehensive tables were constructed, involving all the measures of the standardized tests given to the American and Japanese students. Another table pertaining to the factor of elimination will be of great assistance in the determination of tendencies as well as an aid in the explanation of the comparative test results. This discussion of the American and Japanese in their respective classes will be centered around Table XXXIX, XL, XLI, XLII, and XLIII.
# TABLE XXXIX
SHOWING COMPARATIVE MEASURES OF THE AMERICAN AND JAPANESE SENIOR CLASSES

## SENIORS

<table>
<thead>
<tr>
<th>Measures</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>108.60± .675</td>
<td>105.60± 1.19</td>
<td>40.63± 1.81</td>
<td>34.56± 1.42</td>
<td>67.29± 2.16</td>
<td>68.8± 2.36</td>
<td>63.92± 1.01</td>
<td>56.87± 1.97</td>
<td>132.79± 4.06</td>
<td>186.87± 4.60</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>S. D.</td>
<td>6.57± 4.78</td>
<td>7.05± .84</td>
<td>17.45± 1.28</td>
<td>8.45± 1.00</td>
<td>21.00± 1.53</td>
<td>13.57± 1.67</td>
<td>9.72± 1.72</td>
<td>6.94± .76</td>
<td>39.49± 2.87</td>
<td>27.30± 3.25</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>6.05</td>
<td>6.69</td>
<td>43</td>
<td>24</td>
<td>31</td>
<td>20</td>
<td>15</td>
<td>11</td>
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<td>15</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P. E. diff. of Means</td>
<td>1.36</td>
<td>2.30</td>
<td>3.19</td>
<td>1.47</td>
<td>6.13</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Chances in 100 that the reliable difference is greater than zero.</td>
<td>93</td>
<td>96</td>
<td>62</td>
<td>100</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Q. correlation coefficients and P. E. of the &quot;r&quot;.</td>
<td>.63± .06</td>
<td>.26± .16</td>
<td>.59± .07</td>
<td>.36± .15</td>
<td>.35± .09</td>
<td>.34± .14</td>
<td>.47± .08</td>
<td>.27± .10</td>
<td></td>
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</tr>
</tbody>
</table>

# TABLE XL
SHOWING COMPARATIVE MEASURE OF AMERICAN AND JAPANESE JUNIOR CLASSES

<table>
<thead>
<tr>
<th>Measures</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
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<tr>
<td>Mean</td>
<td>99.52± .92</td>
<td>102.10± 1.37</td>
<td>89.68± 1.52</td>
<td>87.80± 1.36</td>
<td>92.40± 1.43</td>
<td>97.80± 1.76</td>
<td>77.90± 1.85</td>
<td>80.80± 1.51</td>
<td>89.83± 2.00</td>
<td>94.80± 1.98</td>
<td>61.32± 2.75</td>
<td>53.80± 1.54</td>
<td>113.55± 2.05</td>
<td>160.80± 6.81</td>
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<tr>
<td>S. D.</td>
<td>9.12± .64</td>
<td>10.12± 1.13</td>
<td>15.16± 1.07</td>
<td>8.60± .97</td>
<td>14.12± 1.60</td>
<td>11.16± 1.24</td>
<td>18.36± 1.31</td>
<td>9.50± 1.06</td>
<td>19.90± 1.41</td>
<td>12.50± 1.40</td>
<td>23.85± 1.94</td>
<td>9.70± 1.10</td>
<td>20.40± 1.45</td>
<td>42.80± 4.81</td>
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<td>V.</td>
<td>9</td>
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<td>17</td>
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</tr>
<tr>
<td>P. E. diff. of means</td>
<td>1.64</td>
<td>2.04</td>
<td>2.47</td>
<td>2.38</td>
<td>2.81</td>
<td>3.15</td>
<td>7.11</td>
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<tr>
<td>Chances in 100 that the reliable difference is greater than zero.</td>
<td>85</td>
<td>73</td>
<td>89</td>
<td>79</td>
<td>88</td>
<td>94</td>
<td>100</td>
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<tr>
<td>I. Q. correlation coefficients and P. E. of the &quot;r&quot;.</td>
<td>.59± .07</td>
<td>.50± .12</td>
<td>.66± .06</td>
<td>.68± .09</td>
<td>.61± .06</td>
<td>.63± .10</td>
<td>.67± .06</td>
<td>.69± .08</td>
<td>.54± .08</td>
<td>.66± .09</td>
<td>.79± .04</td>
<td>.77± .07</td>
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<tr>
<td>Measures</td>
<td>AMER.</td>
<td>JAP.</td>
<td>AMER.</td>
<td>JAP.</td>
<td>AMER.</td>
<td>JAP.</td>
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</tr>
<tr>
<td>I. Q.</td>
<td>104.04 ± .88</td>
<td>101.68 ± 1.33</td>
<td>51.93 ± 1.34</td>
<td>52.46 ± 2.11</td>
<td>85.90 ± .75</td>
<td>49.14 ± .92</td>
<td>138.75 ± 4.44</td>
<td>164.28 ± 4.71</td>
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<tr>
<td>S. D.</td>
<td>9.78 ± .62</td>
<td>11.00 ± .94</td>
<td>14.36 ± .95</td>
<td>14.48 ± 1.49</td>
<td>8.66 ± .53</td>
<td>7.48 ± .65</td>
<td>49.30 ± 3.14</td>
<td>38.90 ± 3.33</td>
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<td>V</td>
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<td>11</td>
<td>28</td>
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<td>16</td>
<td>15</td>
<td>36</td>
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<tr>
<td>P. E. diff. of means</td>
<td>1.59</td>
<td></td>
<td>2.49</td>
<td></td>
<td>1.18</td>
<td></td>
<td>6.47</td>
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</tr>
<tr>
<td>Chances in 100 that the reliable difference is greater than zero</td>
<td>80</td>
<td></td>
<td>55</td>
<td></td>
<td>100</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I. Q. correlation coefficients and the P. E. of the “r”</td>
<td>.58 ± .07</td>
<td>.65 ± .07</td>
<td>.76 ± .04</td>
<td>.84 ± .04</td>
<td>.46 ± .07</td>
<td>.44 ± .10</td>
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</tbody>
</table>

**TABLE XLII**

SHOWING COMPARATIVE MEASURES OF AMERICAN AND JAPANESE FRESHMAN CLASSES

<table>
<thead>
<tr>
<th>Measures</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
<th>AMER.</th>
<th>JAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Q.</td>
<td>101.74 ± .73</td>
<td>98.56 ± 1.05</td>
<td>50.60 ± 1.27</td>
<td>40.70 ± 1.99</td>
<td>58.71 ± 1.89</td>
<td>44.80 ± 1.69</td>
<td>148.67 ± 3.50</td>
<td>117.66 ± 5.31</td>
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</tr>
<tr>
<td>S. D.</td>
<td>8.56 ± .52</td>
<td>8.78 ± .74</td>
<td>14.66 ± .90</td>
<td>8.25 ± .77</td>
<td>22.10 ± 1.34</td>
<td>13.72 ± 1.19</td>
<td>40.90 ± 2.48</td>
<td>43.10 ± 3.75</td>
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<tr>
<td>V</td>
<td>8</td>
<td>10</td>
<td>29</td>
<td>20</td>
<td>38</td>
<td>31</td>
<td>28</td>
<td>37</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P. E. diff. of means</td>
<td>1.27</td>
<td></td>
<td>1.67</td>
<td></td>
<td>2.53</td>
<td></td>
<td>6.35</td>
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</tr>
<tr>
<td>Chances in 100 that the reliable difference is greater than zero</td>
<td>100</td>
<td></td>
<td>100</td>
<td></td>
<td>100</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I. Q. correlation coefficients and the P. E. “r”</td>
<td>.49 ± .07</td>
<td>.39 ± .11</td>
<td>.75 ± .04</td>
<td>.72 ± .06</td>
<td>.43 ± .07</td>
<td>.51 ± .09</td>
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</tr>
</tbody>
</table>
TABLE XLIII

Showing the Per cent of Elimination or Drop-out by Class of the American and Japanese Students.

<table>
<thead>
<tr>
<th>Class</th>
<th>American</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior</td>
<td>44.83%</td>
<td>50.00%</td>
</tr>
<tr>
<td>Junior</td>
<td>46.92%</td>
<td>41.94%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>34.62%</td>
<td>36.96%</td>
</tr>
<tr>
<td>Freshman</td>
<td>34.45%</td>
<td>14.29%</td>
</tr>
</tbody>
</table>

In the discussion of the test results of the American and Japanese senior classes, the following tables will be used; Table XXXIX, showing comparative measures of the American and Japanese senior classes; Table XLIII, showing the per cent of elimination or drop-out of the American and Japanese students. Upon examining Table XXXIX, it is noted that the American seniors have a higher mean score in intelligence, vocabulary (Inglis), and reading; while the Japanese score higher in vocabulary (Clinton) and school marks. The Americans are more variable than the Japanese in both vocabulary tests, reading and school marks, but not in intelligence. In comparing the standard deviations, it is noted that the Japanese tend to group themselves nearer to the central tendency in all the tests with the exception of the intelligence test. When noting the measures dealing with the reliable difference of the means, it is found that the reliable difference of the means
favor the Americans in intelligence, vocabulary (Inglis), and, in reading, they are significantly superior. On the Clinton Vocabulary test, the reliable difference is in favor of the Japanese and they are significantly superior in school marks. There is a greater relationship between the intelligence of the Americans than the Japanese in both vocabulary tests and school marks. According to the data, the correlation between I.Q. and reading for the Americans and Japanese are about equal. Table XLIII shows that a greater percentage of the Japanese seniors than the American seniors are eliminated.

From the above discussion, it is evident that some factor besides intelligence plays an important part in the Japanese scores. It can be seen that the Japanese are significantly inferior in reading and, therefore, a language handicap is present. How much this affects their intelligence score is unknown to the writer. It is the writer's opinion that unequal opportunity and experience contribute to the reading handicap. If greater elimination indicates selection, it is substantiated by the fact that in all the tests, with the exception of intelligence, the Japanese tend to group themselves closer to the central tendency. The superiority of the Japanese seniors in school marks may be due to greater industry and persistence which would be necessary in order that the Japanese may
compete with the American seniors, or perhaps, it is due to the belief that the teachers favor the Japanese.

In the discussion of the test results of the American and Japanese junior classes, the following tables will be used: Table XL, showing the comparative measures of the American and Japanese junior classes; Table XLIII, showing the per cent of elimination or drop-out of the American and Japanese students. Upon examining Table XL, it is noted that the American juniors obtained a higher mean score in word meaning, paragraph meaning, and vocabulary; while the Japanese scored higher in intelligence, spelling, language usage and school marks. The Americans are more variable than the Japanese in word meaning, paragraph meaning, spelling, language usage and vocabulary, but not in intelligence and school marks. In comparing the standard deviations, it is noted that the Japanese consistently group themselves closer to the central tendency than the Americans in all the tests with the exception of intelligence and school marks. When noting the measures dealing with the reliable differences of the means, it is found that the reliable difference of the means favor the Americans in word meaning, paragraph meaning and vocabulary, but there is not a wholly significant reliable difference between the groups on these measures. The reliable difference of the means favor the Japanese in intelligence, language usage, spelling and school marks. In school marks, there is a significantly reliable
difference favoring the Japanese juniors, which indicates, Japanese superiority. Apparently there is greater relationship between the intelligence of the Americans than the Japanese in word meaning and school marks. The relationship between intelligence and paragraph meaning, spelling and language usage for the Japanese juniors is slightly greater than it is for the American juniors, but in vocabulary (Clinton), the intelligence of the Japanese correlates higher than the Americans. Table XLIII shows that a greater percentage of the Americans are eliminated or dropped-out.

The tests on word meaning and paragraph meaning are listed as reading tests in the Stanford Achievement Test. It is noted that the American juniors tend to be superior in these tests which can be expected since the opportunities of the groups are unequal due to the fact that the Japanese speak their native tongue in their homes. Their superiority in language usage is an interesting point. The author believes that it is due to greater effort on their part to master the use of the English language; while the Americans, in general, are perhaps carefree in their attitude toward it. A reliable difference in intelligence favors the Japanese juniors. A reliable difference in vocabulary favors the American juniors. This is perhaps due to the influence of the home upon the development of vocabulary. The Japanese superiority in school marks is influenced by their superiority
in intelligence as well as by their apparent persistence and industry, and perhaps to favoritism shown by teachers. In all the tests with the exception of intelligence and school marks the Japanese tend to group themselves closer to the central tendencies than the Americans; which seems to indicate selection, but it is noted that a greater percentage of the Americans are eliminated. If the elimination of the American juniors is due to low mentality, the writer cannot explain the apparent selectivity of the Japanese in the tests.

In the discussion of the test results of the American and Japanese sophomore classes, the following tables will be used; Table XLI, showing comparative measures of the American and Japanese sophomore classes; Table XLIII, showing the per cent of elimination or drop-out of the American and Japanese students. Upon examining Table XLI, it is noted that the American sophomores have higher mean scores in intelligence and reading; while the Japanese score higher in vocabulary and school marks. The Americans tend to be more variable in reading and school marks but not in intelligence. The Japanese and Americans are equally as variable in vocabulary. In comparing the standard deviations of the groups, it is noted that the Japanese tend to group themselves closer to the means than the Americans in reading and school marks. There is not a great difference in the grouping of the scores in vocabulary between the
groups. In intelligence the Americans group themselves slightly closer to the central tendency than the Japanese. When noting the measures dealing with the reliable differences between the means, it is found that the reliable difference favors the Americans in intelligence, and also shows a significantly reliable difference in reading in their favor. A significantly reliable difference is found in school marks which favor the Japanese. The Japanese show a slightly reliable difference in vocabulary. There is a greater relationship between the intelligence of the Japanese than the Americans in vocabulary and reading but not in school marks. Table XI shows that a greater percentage of the Japanese sophomores are eliminated than the American sophomores. Since the difference is slight it may not be of any significance.

From this discussion it is evident that some factors besides intelligence influence the superiority of the Americans in reading. It can be seen that the Japanese are significantly inferior in reading and therefore a reading handicap is present. How much this affects their intelligence score is unknown to the writer. It is the writer's opinion, that unequal opportunity and experience contribute to the reading handicap. The Japanese are significantly superior in school marks. It is evident that when a group with inferior reading ability and intelligence obtain higher school marks, another factor is
operative which may be industry and persistence, or perhaps the teachers favor the Japanese. Since the Japanese and Americans tend to group themselves, in general, equally as close to the central tendencies, and there is very little difference in the percentage of elimination, it is evident that the groups are equally as selective.

In the discussion of the test results of the American and Japanese freshman classes, the following tables will be used; Table XLII showing comparative measures of American and Japanese freshmen; Table XLIII showing the per cent of elimination or drop-out of the American and Japanese students. Upon examining Table XLII, it is noted the American freshmen consistently obtained higher mean scores than the Japanese freshmen in intelligence, vocabulary, reading and school marks. The Americans are more variable in vocabulary and reading than the Japanese, but not as variable in intelligence and school marks. In comparing the standard deviations, it is noted that the Japanese group themselves closer to the central tendencies than the Americans in vocabulary and reading with little difference in the grouping between the groups in intelligence and school marks. Then noting the measures dealing with the reliable differences of the means, it is found that there are significantly reliable differences in favor of the American freshmen in intelligence, vocabulary, reading and
There is a greater relationship between the intelligence of the Americans than the Japanese in vocabulary and reading, but not in school marks. Table XLIII shows that a greater percentage of the American freshmen than the Japanese freshmen are eliminated.

From the above discussion it is evident that the Japanese freshmen are significantly inferior to the American freshmen in intelligence, vocabulary, reading and school marks. A language handicap is evident, but this may be due to low intelligence and not due to poor reading. If greater elimination indicates selection, the American freshmen are more select than the Japanese freshmen. The writer feels justified in stating that the Japanese freshmen are very inferior to the American freshmen, realizing, at the same time, that differences in opportunity and social status exist.
After discussing the results of the Americans and Japanese on the standardized tests and in school marks, it is important that the responses on the questionnaire be examined in order to point out possible factors that may contribute to the superiority of the Japanese in school marks. The comparison of the responses of the American and Japanese groups on the questionnaire will be centered around tables XLIV, XLV, XLVI and XLVII, showing the responses of the American and Japanese by classes on the questionnaire.

In comparing the responses of the American and Japanese seniors on the questionnaire, the interpretations will be taken from Table XLIV showing the responses of the American and Japanese seniors on the questionnaire.
TABLE XLIV

Showing the Responses of the American and Japanese Seniors on the Questionnaire.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>AMER.</th>
<th>JAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. Study Time in School Per Day</td>
<td>112 min.</td>
<td>92 min.</td>
</tr>
<tr>
<td>Av. Study Time Out of School Per Day</td>
<td>48 min.</td>
<td>133 min.</td>
</tr>
<tr>
<td>Av. Time Spent in Working Per Day</td>
<td>211 min.</td>
<td>182 min.</td>
</tr>
<tr>
<td>Professional</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Occupational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-Professional</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>General Clerical</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>Unskilled</td>
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<td></td>
</tr>
<tr>
<td>Level of</td>
<td></td>
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<tr>
<td>Father</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>48%</td>
<td>68%</td>
</tr>
<tr>
<td>College</td>
<td>16%</td>
<td>19%</td>
</tr>
<tr>
<td>500-1000</td>
<td>13%</td>
<td>6%</td>
</tr>
<tr>
<td>Income of Father</td>
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</tr>
<tr>
<td>1000-1500</td>
<td></td>
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</tr>
<tr>
<td>1500-2000</td>
<td>46%</td>
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<td>2000-2500</td>
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<td>2500-3000</td>
<td>13%</td>
<td>14%</td>
</tr>
<tr>
<td>Place of Residence</td>
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<tr>
<td>Farm</td>
<td>82%</td>
<td>100%</td>
</tr>
<tr>
<td>Town</td>
<td>18%</td>
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</tr>
<tr>
<td>Number of Extra-Curricular Activities</td>
<td>3.4</td>
<td>2.13</td>
</tr>
<tr>
<td>Av. Time Used in Extra-Curricular Act.</td>
<td>94 min.</td>
<td>49 min.</td>
</tr>
<tr>
<td>Professional</td>
<td>21%</td>
<td>38%</td>
</tr>
<tr>
<td>Semi-Professional</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>General Clerical</td>
<td>32%</td>
<td>6%</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Unskilled</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Ambition</td>
<td>Undecided</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21%</td>
<td>50%</td>
</tr>
</tbody>
</table>
When noting the item dealing with the average time spent in study per day in school, it is found that the American seniors on an average study 112 minutes per day in school, while the Japanese spend 92 minutes. The average time spent in study per day outside of school for the Americans is 48 minutes and 133 minutes for the Japanese. From these two items, it is apparent that the Japanese on an average, spend more time in study per day. This maybe an indication of industry and persistence which perhaps accounts for the Japanese superiority in school marks. Then to, the teachers may tend to favor them due to their greater effort. This difference in study time, perhaps, is influenced by the language handicap of the Japanese which necessitates a longer period of study. The American seniors spend more time in working at home than the Japanese seniors.

In examining the occupational levels of their fathers, it is found that the Americans have a higher occupational status than the Japanese. This may be due to superior training or lack of race prejudice against Americans. The data show that a greater per cent of the fathers of the Americans are high school and college graduates, but there are more elementary graduates in the Japanese group of fathers. The average income tends to favor the fathers of the Japanese group. If this is true, it may be an indication of the trait of industry. It is noticed that a
greater per cent of the Japanese live on farms than Americans.

In comparing the participation in extra-curricular activities, it is noted that the American seniors participate in a greater number of extra-curricular activities as well as use more time for participation than the Japanese seniors. This difference in the amount of time spent in extra-curricular activities may tend to aid the Japanese scholastically, but surely not in cultural opportunities. Race prejudice may be a factor also, as well as, the belief of the Japanese that they should "stay in their places." When examining the item dealing with occupational interest, it is found that in both groups the students' interests are above the occupational level of their fathers. A greater percentage of the Japanese than the Americans are undecided in their occupational choice. The fact that 38% of the Japanese seniors selected the professional group is perhaps another indication of their industrious tendencies.

In comparing the responses of the American and Japanese juniors on the questionnaire, the interpretations will be taken from Table XLV showing the responses of the American and Japanese juniors on the questionnaire.
### TABLE XLV

Showing the Responses of the American and Japanese Juniors on the Questionnaire.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>AMER.</th>
<th>JAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. Study Time in School Per Day</td>
<td>120 min.</td>
<td>113 min.</td>
</tr>
<tr>
<td>Av. Study Time out of School Per Day</td>
<td>59 min.</td>
<td>132 min.</td>
</tr>
<tr>
<td>Av. Time Spent in Working Per Day</td>
<td>178 min.</td>
<td>161 min.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupational Level of Father</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Semi-Professional</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>General Clerical</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>58%</td>
<td>90%</td>
</tr>
<tr>
<td>Unskilled</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education of Father</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>47%</td>
<td>60%</td>
</tr>
<tr>
<td>High School</td>
<td>14%</td>
<td>5%</td>
</tr>
<tr>
<td>College</td>
<td>20%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income of Father</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>500-1000</td>
<td>39%</td>
<td>73%</td>
</tr>
<tr>
<td>1000-1500</td>
<td>39%</td>
<td>9%</td>
</tr>
<tr>
<td>1500-2000</td>
<td>12%</td>
<td>18%</td>
</tr>
<tr>
<td>2000-2500</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>2500-3000</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place of Residence</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>88%</td>
<td>90%</td>
</tr>
<tr>
<td>Town</td>
<td>12%</td>
<td>10%</td>
</tr>
</tbody>
</table>

| Number of Extra-Curricular Activities     | 3.88   | 2.35 |

<table>
<thead>
<tr>
<th>Av. Time Used in Extra-Curricular Act.</th>
<th>84 min.</th>
<th>62 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-Professional</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>General Clerical</td>
<td>21%</td>
<td>30%</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Unskilled</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Undecided</td>
<td>19%</td>
<td>35%</td>
</tr>
</tbody>
</table>
It is noted in the item dealing with the average time spent in study per day in school that the American juniors on an average spend 120 minutes per day in study in school while the Japanese spend 113 minutes. The average time spent in study out of school for the Americans is 59 minutes and 132 for the Japanese. From these two items, it is apparent that the Japanese spend a greater total of time on the average in study per day than the Americans. Again this may indicate industry which influences the Japanese superiority in school marks as well as being influenced by the higher average intelligence of the Japanese in this class. Their superiority in language usage in this class, as mentioned in a previous discussion, may also contribute to their superior school marks. The American and Japanese juniors work on the average about an equal length of time per day at home.

In examining the occupational levels of the fathers of the groups, it is noted that the Americans tend to occupy a higher level on the average than the Japanese. Race prejudice and inequality of training may be the dominant factors contributing to this. The data show that a greater per cent of the fathers of the American group are high school and college graduates, but there are more elementary graduates in the Japanese group of fathers. In this class the average income is higher in the American group than in
the Japanese group. The difference of education may contribute greatly in this case. A greater per cent of both groups live on farms than in towns.

In comparing the participation in extra-curricular activities, it is noted that the American juniors participate in a greater number of extra-curricular activities as well as use more time for participation than the Japanese. This difference in participation and time spent in extra-curricular activities may be factors contributing to the superiority of the Japanese in school marks. The Japanese may not feel as if they are welcome to mingle with the Americans. If this is true, they would tend not to enter as many extra-curricular activities. It may be that their purpose is not in accord with the cultural opportunities offered in extra-curricular activities and, therefore, they do not care to enter them.

When examining the item dealing with occupational interest, it is found that in both groups the students' interests are above the occupational level of their fathers'. A greater percentage of the Japanese than the Americans are undecided in their occupational choice. Since there is some restriction on the Japanese in most of the higher occupations, due to social inequality, this indecision on their part is expected. In general, the American group tends to select the upper levels of occupational endeavors. Teacher-
influence as well as home-influence may contribute toward the occupational choices of the students.

In comparing the responses of the American and Japanese sophomores on the questionnaire, the interpretations will be taken from Table XLVI showing the responses of the American and Japanese sophomores on the questionnaire.
TABLE XLVI

Showing the Responses of the American and Japanese Sophomores on the Questionnaire.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>AMER.</th>
<th>JAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. Study Time in School Per Day</td>
<td>97 min.</td>
<td>113 min.</td>
</tr>
<tr>
<td>Av. Study Time out of School Per Day</td>
<td>65 min.</td>
<td>129 min.</td>
</tr>
<tr>
<td>Av. Time Spent in Working Per Day</td>
<td>159 min.</td>
<td>160 min.</td>
</tr>
<tr>
<td>Professional</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Occupational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-Professional</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>General Clerical</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>82%</td>
<td>92%</td>
</tr>
<tr>
<td>Unskilled</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Level of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>66%</td>
<td>62%</td>
</tr>
<tr>
<td>High School</td>
<td>20%</td>
<td>7%</td>
</tr>
<tr>
<td>Father of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Income of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500-1000</td>
<td>51%</td>
<td>62%</td>
</tr>
<tr>
<td>1000-1500</td>
<td>28%</td>
<td>13%</td>
</tr>
<tr>
<td>1500-2000</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td>Father</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2500</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>2500-3000</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Place of Residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm</td>
<td>77%</td>
<td>94%</td>
</tr>
<tr>
<td>Town</td>
<td>23%</td>
<td>6%</td>
</tr>
<tr>
<td>Number of Extra-Curricular Activities</td>
<td>3.27</td>
<td>2.06</td>
</tr>
<tr>
<td>Av. Time Used in Extra-Curricular Act.</td>
<td>79 min.</td>
<td>48 min.</td>
</tr>
<tr>
<td>Professional</td>
<td>22%</td>
<td>11%</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-Professional</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Clerical</td>
<td>32%</td>
<td>28%</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>8%</td>
<td>18%</td>
</tr>
<tr>
<td>Occupational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unskilled</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Ambition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undecided</td>
<td>30%</td>
<td>33%</td>
</tr>
</tbody>
</table>
When noting the item dealing with the average time spent in study per day in school, it is found that the American sophomores on an average study 97 minutes per day in school, while the Japanese spend 113 minutes in study per day. The average time spent in study per day, outside of school, by the Americans is 65 minutes and 129 minutes for the Japanese. From these two items, it is evident that the Japanese on an average spend more time in study per day. The writer believes this to be an indication of industry and persistence which perhaps accounts for the Japanese superiority in school marks. Also the language handicap of the Japanese would necessitate a difference in study time, but how much, is unknown to the writer. An element of favoritism by the teachers may also be present. There is not much difference in the amount of time spent in working per day between the groups.

In examining the occupational levels of the fathers of the American and Japanese groups, it is found that the Americans have a higher occupational status than the Japanese which is apparently due to superior training. The average income of the American group is higher than the Japanese group, which is probable due to their higher occupational status. A greater percentage of the Japanese sophomores live on farms than the American sophomores.
In comparing the participation in extra-curricular activities it is noted that the American sophomores participate in a greater number of extra-curricular activities as well as use more time for participation than the Japanese sophomores. The difference in the amount of time spent in extra-curricular activities may aid the Japanese scholastically, but surely not in cultural opportunities. It may be that they do not wish to mix with the American group due to a feeling of social inferiority. Again, it is noted that a greater percentage of the Japanese are undecided in their occupational choice than the Americans, however, as in the preceding classes, they tend to select occupations that are above the level of their fathers. It is found that a greater per cent of the Americans choose professional occupations than the Japanese. It is possible that the selectivity tends to influence the choice of the Americans toward the professional groups.

In comparing the responses of the American and Japanese freshmen on the questionnaire, the interpretations will be taken from Table XLVII.


**TABLE XLVII**

Showing the Responses of the American and Japanese Fresimen on the Questionnaire.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>AMER.</th>
<th>JAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Av. Study Time in School Per Day</strong></td>
<td>114 min.</td>
<td>116 min.</td>
</tr>
<tr>
<td><strong>Av. Study Time out of School Per Day</strong></td>
<td>64 min.</td>
<td>110 min.</td>
</tr>
<tr>
<td><strong>Av. Time Spent in Working Per Day</strong></td>
<td>142 min.</td>
<td>133 min.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Occupational Level</strong></td>
<td>Semi-Professional</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Father</strong></td>
<td>General Clerical</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Father</strong></td>
<td>Semi-Skilled</td>
<td>79%</td>
</tr>
<tr>
<td></td>
<td>Unskilled</td>
<td>4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education of Father</strong></td>
<td>Elementary</td>
<td>52%</td>
</tr>
<tr>
<td><strong>Education of Father</strong></td>
<td>High School</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Education of Father</strong></td>
<td>College</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Income of Father</strong></td>
<td>500-1000</td>
<td>53%</td>
</tr>
<tr>
<td><strong>Income of Father</strong></td>
<td>1000-1500</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Income of Father</strong></td>
<td>1500-2000</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Income of Father</strong></td>
<td>2000-2500</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Income of Father</strong></td>
<td>2500-3000</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place of Residence</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Place of Residence</strong></td>
<td>Farm</td>
<td>84%</td>
</tr>
<tr>
<td><strong>Place of Residence</strong></td>
<td>Town</td>
<td>16%</td>
</tr>
</tbody>
</table>

| Number of Extra-Curricular Activities| 3.10 | 2.24 |

<table>
<thead>
<tr>
<th>Av. Time Used in Extra-Curricular Act.</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Av. Time Used in Extra-Curricular Act.</strong></td>
<td>40 min.</td>
<td>46 min.</td>
</tr>
<tr>
<td><strong>Professional</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Student Level of Occupational Ambition</strong></td>
<td>Semi-Professional</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Student Level of Occupational Ambition</strong></td>
<td>General Clerical</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Student Level of Occupational Ambition</strong></td>
<td>Semi-Skilled</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Occupational Ambition</strong></td>
<td>Unskilled</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Occupational Ambition</strong></td>
<td>Undecided</td>
<td>27%</td>
</tr>
</tbody>
</table>
The item dealing with the average time spent in study per day in school shows that the American freshmen study on an average 114 minutes per day in school, while the Japanese spend 115 minutes. The average time spent in study per day outside of school for the Americans is 64 minutes and 110 for the Japanese. From these two items, it is apparent that the Japanese on an average spend more time in study per day. In this class, the Americans are significantly superior in all the standardized tests as well as school marks. Then the differences in study time may be necessary in order that the Japanese freshmen can compete with the American freshmen. In the preceding classes, the differences have been greater in study time than they are in this class. This factor may indicate that the length of study time has a positive relationship with the school marks obtained. Then to, increasing familiarity with the English language should without a doubt increase the average school marks of the Japanese in this class as it progresses in the school. The time spent in working at home is about equal between the groups. Again we find the fathers occupational level of the American freshman is higher than the Japanese occupational level. The average income favors the fathers of the Japanese group but apparently this is not due to superior
education since this is not the case. A greater per cent of the Japanese live on farms than the Americans.

It is noted that the American freshmen participate in a greater number of extra-curricular activities, but the Japanese use more time for those that they participate in. There is a small difference in the amount of time used for extra-curricular activities, but, if it is a significant factor in the determination of school marks, it is evident that the lower school marks of the Japanese may be due to the amount of time used for extra-curricular activities as well as to lower intelligence. In noting the item dealing with the occupational ambition of the students, it is noted that they tend to select occupations above the occupational levels of their fathers. A greater percentage of the Americans are undecided as to their occupational choice than the Japanese. The American freshmen have a greater tendency toward the professional level than the Japanese freshmen.
CHAPTER IV
SUMMARY AND CONCLUSION

In summarizing this comparative study of American and Japanese students, the writer will review the important points of the preceding chapters. The purpose of the study is to point out the racial differences, if any, as measured by the tests given. It is hoped that this study will throw some light on the relative mental ability, achievement and scholastic average, and factors contributing to them.

The research work was carried on in 1933-34, at Elk Grove Union High School, which draws its attendance principally from rural sections. Data was obtained on 206 Americans and 105 Japanese. The groups were compared by class rather than as a whole group since all the classes were not tested by the same tests. Measures on the standardized tests in intelligence, reading, spelling, vocabulary, word meaning, language usage, and paragraph meaning were obtained. Personal data was acquired by means of a questionnaire including items on age, grade in school, length of study time in and out of school, time spent in working, education of father, occupation of father, income of father, students occupational interest, place of residence, number of extra-curricular activities
in which they participated, and the average time used for extra-curricular activities. Data on elimination or drop-out was also obtained. The historical work on Americans and Japanese is reviewed in Chapter II. Chapter III deals with the statistical treatment and discussion of the test data by class, as well as a discussion of the responses on the questionnaire by class.

The writer has based the following summary on the discussions of the results of the American and Japanese classes on the standardized tests, school marks and on the questionnaire as discussed in Chapter III. An attempt will be made to give the general trends and results of the Americans and Japanese as shown by the data in this thesis. In intelligence, the mean I.Q. of the American students is 103.28 and the Japanese obtained a mean I.Q. of 98.59. It is noted that the Japanese are consistently inferior to the Americans in reading. Data on elimination or drop-out seems to indicate a tendency toward Japanese selectivity as does the standard deviation on the tests. Home influence may favor the Americans in their tendency to be superior to the Japanese in vocabulary.

The Japanese are on an average 6 months older than the Americans in chronological age and the Americans 2 months older than the Japanese in mental age. The difference in chronological age may indicate retardation due to language handicap and lower mental ability.
The Japanese that were tested in spelling and language usage tend to score higher than the Americans which may be due to their higher mental ability and selectivity. The decided superiority in school marks of the Japanese may be explained partly by greater industry and persistence on their part, but it is the writer's opinion that the greater industry of the Japanese does not compensate for their inferiority in mental ability. It appears that the teachers favor the Japanese in school marks. The data indicates that the Japanese are more industrious and persistent than the Americans since on an average the Japanese spend more time in study per day than the Americans. This may be due to the fact that it is necessary for them to study longer in order to compete with the Americans due to language handicap and lower mental ability. It is noted that both groups tend to use approximately equal lengths of time spent in work at home.

The occupational level of the American fathers tends to be higher than the Japanese fathers' occupational level, due to the educational superiority of the American fathers. Racial prejudice may be a determining influence on the Japanese in this case. The average income of the Japanese fathers is slightly higher than the American fathers. A greater percentage of Japanese live on farms than the Americans.

The average American tends to spend more time in
participation in extra-curricular activities and participates in a greater number of activities than the Japanese. This may indicate a tendency toward Japanese social inferiority. It is the writer's opinion that the greater participation of the Americans in extra-curricular activities does not materially affect their school marks.

In comparing the occupational interests of the groups, it is found that the Japanese have a greater tendency to be undecided in the selection of an occupation than the Americans. Race prejudice reduces the number of vocations in which the Japanese can enter and apparently this is a factor affecting their indecision. Americans show a greater tendency to select the professional level in their occupational choices than the Japanese. Both groups desire an occupational level above that of their fathers.

The writer feels justified in forming the following conclusions:

1. The Americans are, on an average, more intelligent.
2. The Japanese are inferior in reading ability.
3. The Americans tend to score higher in vocabulary understanding.
4. The Japanese are superior in school marks.
5. The Japanese spend more time in study.
6. The Japanese spend less time in extra-curricular activities.
7. The Japanese soon to manifest a social inferiority.

8. The Japanese seem to be content with a lower occupational level, and there is greater occupational indecision among them.

9. There is evidence that the teachers favor the Japanese in the assignment of school marks.
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APPENDICES

APPENDIX "A"

Standardized Tests
DIRECTIONS

This is an exercise designed to test the extent of your English vocabulary. On the following pages are given certain sentences and expressions. In each case one word is in italics. Following each sentence or expression are five words. In each case select that one of the five words which most nearly corresponds in meaning to the word italicized in the sample sentence or expression. Draw a line under the word thus selected. The word to be selected and underlined will not always be a close synonym, but it will always correspond nearly to the word in the example. Compound words or words joined by a hyphen count as one word.

If you underline a word by mistake and wish to correct the error, cross out entirely the word wrongly underlined and underline the word you consider correct. If you are sure you do not know which word to underline, place a cross (×) at the end of the line; however, do not be afraid to underline a word which you think is nearest the meaning required.

SCORE

| Words right, page 2 |  |
| Words right, page 3 |  |
| Words right, page 4 |  |
| Total words right |  |
| Percentile Score |  |
1. They play with abandon.
2. He was acquitted.
3. He accosted the officer.
4. I am actuated by friendship.
5. He is in his adolescence.
6. An agglomeration of roots.
7. He alleges insanity.
8. Amenable to kindness.
9. I ignored the
10. An apathetic listener.
11. He seems apprehensive.
12. Arson is a crime.
13. It assuages thirst.
15. We demanded an autopsy.
16. That is a bosky path.
17. A batch of bread.
18. He bestows favors.
19. A blend of coffee.
20. A colossal statue.
21. He is a bravo,
22. The buckram was
23. I heard of the cabal.
24. Do you like cameos?
25. We escaped the catastrophe.
26. They were censured.
27. They were censured.
28. They revere chastity.
29. Clandestine meetings.
30. A complaisant gentleman.
31. A complaisant gentleman.
32. I dislike condiments.
33. That is only a conjecture.
34. I am not in contact with it.
35. It is the result of convexity.
36. We heard of his craftiness.
37. These figures are cumulative.
38. He is dauntless in action.
39. They deferred action.
40. When questioned he demurred.
41. Desultory remarks.
42. He spoke with diffidence.
43. His clothes are disheveled.
44. His dinners.
45. A dowdy dress.
46. The plant has effloresced.
47. An elusive answer.
48. It enhances her beauty.
49. The acid erodes copper.
50. Fear is a great excitant.
51. The only extant copy.
52. The village farrier.
53. A fictitious character.
54. He flouted his opponent.
55. Friction causes heat.
56. Our guest gaped.
57. A glabrous head.
58. He has a grouch.
59. A hapless fate.
60. A regular hexagon.
61. She is a hoyden.
62. A field imbrued with blood.
63. Impervious to water.
64. It was due to inadvertence,
65. An increment of two percent.
66. Indurated clay,
67. Those wires are inflexible,
68. An instinctive fear.
69. He fought with intrepidity,
70. Inveterate hatred.
71. He was jeered.
72. Kismet ordained it so.
73. A lascivious joke.
74. He suffered a lesion,
75. You must not loiter,
76. He was maimed.
77. A well-known martinet.
78. She is of menial rank,
79. That is a moot question.
80. A natty coat.
81. The youth was obdurate.
82. An obsolete word.
83. Opaque cloth,
84. He was ousted,
85. They had a parley.
86. Pelagic animals.
87. A land of perennial snow,
88. A pertinent remark.
89. A piquant sauce,
90. I pledged my watch.
91. They came in pomp.
92. A practicable plan.
93. A preeminent authority.
94. A pretentious house.
95. A probationary member.
96. The proletarian class.
97. Whom do you propose?
98. His teeth protrude.
99. Funiculous behavior.
100. A quaint ornament.
| 101. The quintessence of wit. | perfection | charm | opposite | danger | absence |
| 102. A rampant socialist. | prejudiced | unrestrained | converted | angry | dangerous |
| 103. The curious were rebuffed. | rewarded | expelled | disappointed | admitted | checked |
| 104. A recumbent position. | graceful | untenable | disappointed | well-paid | desirable |
| 105. He rejected your argument. | denied | accepted | ridiculed | disproved | ignored |
| 106. I doubt his reliability. | mortality | ward | trustworthiness | intelligence | story |
| 107. The watch was repaired. | resided | lost | recommended | mended | wealth |
| 108. A man of repute. | wealth | power | parts | reputation | courage |
| 109. He resorted to trickery. | bad-resource | consented | objected | alluded | fell-victim |
| 110. He must retreat. | excavate | economize | adjourn | refuse | reply |
| 111. A ribald jest. | vulger | mirthful | mirthless | untimely | witty |
| 112. A rude hut. | dirty | log | deserted | crude | thatched |
| 113. He made sacrifices. | blunders | promises | self-denials | religious-vows | efforts |
| 114. He was sanctified. | hypocritical | made-holy | profane | very-ill | condemned |
| 115. Her clothing was saturated. | disinfected | ripped | stolen | sealed | burned |
| 116. A schism of sects. | union | division | agreement | decrease | elimination |
| 117. Subjected to scrutiny. | torture | pressure | scorn | examination | danger |
| 118. Segregate these plants. | set-apart | transplant | cultivate | classify | fertilize |
| 119. They were severally punished. | properly | harshly | unjustly | promptly | individually |
| 120. A sibilant sound. | mournful | persistent | annoying | explosive | hissing |
| 121. He stilled his thirst. | indulged | endured | quenched | restrained | bewildered |
| 122. She solicited favors. | asked-for | desired | refused | granted | begrudged |
| 123. Sovereign power. | financial | political | undue | paternal | royal |
| 124. He is spleenful. | foul-minded | satisfied | frail | humorous | ill-humorred |
| 125. A desirable statute. | law | monument | height | assembly | constitution |
| 126. Stimulated by promises. | deceived | spurred-on | flattered | rewarded | bound-up |
| 127. In the stress of debate. | course | give-and-take | strain | reverses | rule |
| 128. A sturdy little fellow. | cunning | vigorous | friendly | curious | stupid |
| 129. The subtleties of speech. | parts | courtesies | errors | fine-points | wonders |
| 130. A misty day. | oppressively-hot | very-windy | cloudy | eventful | wasted |
| 131. A supple branch. | withered | lower | leafless | flexible | rigid |
| 132. I suspect him. | envy | disliked | distrust | respect | recommend |
| 133. Synthetic rubber. | cheap | elastic | fibrous | artificial | well-woven |
| 134. That is tantamount to failure. | equivalent | due | opposed | related | superior |
| 135. The temerity of youth. | cowardice | endurance | courage | cruelty | rashness |
| 136. A tepid drink. | intoxicating | cooling | temperance | lukewarm | narcotic |
| 137. A thrilling experience. | dangerous | exciting | unusual | disgusting | profitable |
| 138. They heard a citter. | song-bird | giggle | steam-saw | locast | wood-mouse |
| 139. A tortuous passage. | invisible | stormy | secret | crooked | mistaken |
| 140. Transcribe these notes. | deliver | address | exchange | explain | copy |
| 141. He came on a transport. | mission | errand | troop-ship | wager | freight-train |
| 142. A trite remark. | witty | stale | insulting | uncalled-for | helpful |
| 143. A twinge in the back. | punch | pain | thicker | splinter | shot |
| 144. An uncompromising nature. | swollen | generous | lovable | disagreeable | anyyielding |
| 145. An unfaltering purpose. | revengeful | blind | unhesitating | unreasoning | secret |
| 146. A unique table. | without-duplicate | one-legged | oval | folding | costly |
| 147. An untoward occurrence. | fortunate | peculiar | unexpected | irregular | unfavorable |
| 148. That is utter folly. | dangerous | careless | childish | complete | strange |
| 149. A vapid speech. | elegant | exciting | dull | polished | misleading |
| 150. The ventral cavity. | abdominal | mouth | tooth | chest | throat |
Read this page. Do what it tells you to do.

Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name ........................................................ Age last birthday ...... years
First name, initial, and last name

Birthday ......................................................... Class .................. Date ................. 
Month Day

School or College ................................... City

This is a test to see how well you can think. It contains questions of different kinds. Here is a sample question already answered correctly. Notice how the question is answered:

Which one of the five words below tells what an apple is?
1 flower, 2 tree, 3 vegetable, 4 fruit, 5 animal ............... (4 )

The right answer, of course, is “fruit”; so the word “fruit” is underlined. And the word “fruit” is No. 4; so a figure 4 is placed in the parentheses at the end of the dotted line. This is the way you are to answer the questions.

Try this sample question yourself. Do not write the answer; just draw a line under it and then put its number in the parentheses:

Which one of the five words below means the opposite of north?
1 pole, 2 equator, 3 south, 4 east, 5 west ................... ( )

The answer, of course, is “south”; so you should have drawn a line under the word “south” and put a figure 3 in the parentheses. Try this one:

A foot is to a man and a paw is to a cat the same as a hoof is to a — what?
1 dog, 2 horse, 3 shoe, 4 blacksmith, 5 saddle .......... ( )

The answer, of course, is “horse”; so you should have drawn a line under the word “horse” and put a figure 2 in the parentheses. Try this one:

At four cents each, how many cents will 6 pencils cost? ......................... ( )

The answer, of course, is 24, and there is nothing to underline; so just put the 24 in the parentheses. If the answer to any question is a number or a letter, put the number or letter in the parentheses without underlining anything. Make all letters like printed capitals.

The test contains 75 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

Do not turn this page until you are told to begin.
1. The opposite of hate is (?)  
   1 enemy, 2 fear, 3 love, 4 friend, 5 joy.  

2. If 3 pencils cost 5 cents, how many pencils can be bought for 50 cents?  

3. A bird does not always have (?)  
   1 wings, 2 eyes, 3 feet, 4 a nest, 5 a bill.  

4. The opposite of honor is (?)  
   1 glory, 2 disgrace, 3 cowardice, 4 fear, 5 defeat.  

5. A fox most resembles a (?)  
   1 wolf, 2 goat, 3 pig, 4 tiger, 5 cat.  

6. Quiet is related to sound in the same way that darkness is related to (?)  
   1 a cellar, 2 sunlight, 3 noise, 4 stillness, 5 loud.  

7. A party consisted of a man and his wife, his two sons and their wives, and four children in each son's family. How many were there in the party?  

8. A tree always has (?)  
   1 leaves, 2 fruit, 3 buds, 4 roots, 5 a shadow.  

9. The opposite of economical is (?)  
   1 cheap, 2 stingy, 3 extravagant, 4 value, 5 rich.  

10. Silver is more costly than iron because it is (?)  
    1 heavier, 2 scarcer, 3 whiter, 4 harder, 5 prettier.  

11. Which one of the six statements below tells the meaning of the following proverb? “The early bird catches the worm.”  
   1. Don't do the impossible.  
   2. Weeping is bad for the eyes.  
   3. Don't worry over troubles before they come.  
   4. Early birds like worms best.  
   5. Prompt persons often secure advantages over tardy ones.  
   6. It is foolish to fret about things we can't help.  

12. Which statement above tells the meaning of this proverb? “Don't cry over spilt milk.”  

13. Which statement above explains this proverb? “Don't cross a bridge till you get to it.”  

14. An electric light is related to a candle as an automobile is to (?)  
    1 a carriage, 2 electricity, 3 a tire, 4 speed, 5 glow.  

15. If a boy can run at the rate of 6 feet in 1/2 of a second, how many feet can he run in 10 seconds?  

16. A meal always involves (?)  
    1 a table, 2 dishes, 3 hunger, 4 food, 5 water.  

17. Of the five words below, four are alike in a certain way. Which is the one not like these four?  
    1 bend, 2 shave, 3 chop, 4 whittle, 5 shear.  

18. The opposite of never is (?)  
    1 often, 2 sometimes, 3 occasionally, 4 always, 5 frequently.  

19. A clock is related to time as a thermometer is to (?)  
    1 a watch, 2 warm, 3 a bulb, 4 mercury, 5 temperature.  

20. Which word makes the truest sentence? Men are (?) shorter than their wives.  
    1 always, 2 usually, 3 much, 4 rarely, 5 never.  

21. One number is wrong in the following series. What should that number be?  
    1 4 2 5 3 6 4 7 5 9 6 9.  

22. If the first two statements following are true, the third is (?)  All members of this club are Republicans. Smith is not a Republican. Smith is a member of this club.  
    1 true, 2 false, 3 not certain.  

23. A contest always has (?)  
    1 an umpire, 2 opponents, 3 spectators, 4 applause, 5 victory.  

24. Which number in this series appears a second time nearest the beginning?  
    6 4 5 3 7 8 0 9 5 9 8 8 6 5 4 7 3 0 8 9 1.  

25. The moon is related to the earth as the earth is to (?)  
    1 Mars, 2 the sun, 3 clouds, 4 stars, 5 the universe.  

26. Which word makes the truest sentence? Fathers are (?) wiser than their sons.  
    1 always, 2 usually, 3 much, 4 rarely, 5 never.
27. The opposite of awkward is (?) 
   i strong, 2 pretty, 3 short, 4 graceful, 5 swift. 

d. A mother is always (?) than her daughter. 
   i wiser, 2 taller, 3 stouter, 4 older, 5 more wrinkled. 

30. Which one of the six statements below tells the meaning of the following proverb? “The 
burnt child dreads the fire.” 
   1. Frivolity flourishes when authority is absent. 
   2. Unhappy experiences teach us to be careful. 
   3. A thing must be tried before we know its value. 
   4. A meal is judged by the dessert. 
   5. Small animals never play in the presence of large ones. 
   6. Children suffer more from heat than grown people. 

52. The statement that the moon is made of green cheese is (?) 
   1 absurd, 2 misleading, 3 improbable, 4 unfair, 5 wicked.
53. Of the five things following, four are alike in a certain way. Which is the one not like these four?
1 tar, 2 snow, 3 soot, 4 ebony, 5 coal.

54. What is related to a cube in the same way in which a circle is related to a square?
1 circumference, 2 sphere, 3 corners, 4 solid, 5 thickness.

55. If the following words were seen on a wall by looking in a mirror on an opposite wall, which word would appear exactly the same as if seen directly?
1 OHIO, 2 SAW, 3 NOON, 4 MOTOR, 5 OTTO.

56. If a strip of cloth 24 inches long will shrink to 22 inches when washed, how many inches long will a 36-inch strip be after shrinking?

57. What is related to a cube in the same way in which a circle is related to a square?

58. If the following words were seen on a wall by looking in a mirror on an opposite wall, which word would appear exactly the same as if seen directly?
1 OHIO, 2 SAW, 3 NOON, 4 MOTOR, 5 OTTO.

59. Revolution is related to evolution as flying is to (?)
1 birds, 2 whirling, 3 walking, 4 wings, 5 standing.

60. If a wire 20 inches long is to be cut so that one piece is as long as the other piece, how many inches long must the shorter piece be?

61. If the first two statements following are true, the third is (?) One cannot become a good violinist without much practice. Charles practices much on the violin. Charles will become a good violinist.
1 true, 2 false, 3 not certain.

62. If the words below were arranged to make the best sentence, with what letter would the last word of the sentence end? Print the letter as a capital.
sincerity, traits, courtesy, character of desirable and are...

63. A surface is related to a line as a line is to (?)
1 solid, 2 plane, 3 curve, 4 point, 5 string.

64. What number is in the space which is in the rectangle and in the triangle but not in the circle?

65. What number is in the same geometrical figure or figures as the number 8?

66. How many spaces are there that are in any two but only two geometrical figures?

67. If the words below are arranged to make the best sentence, with what letter would the last word of the sentence end? Print the letter as a capital.
sincerity, traits, courtesy, character of desirable and are...

68. If a strip of cloth 24 inches long will shrink to 22 inches when washed, how many inches long will a 36-inch strip be after shrinking?

69. If a strip of cloth 24 inches long will shrink to 22 inches when washed, how many inches long will a 36-inch strip be after shrinking?

70. A hotel serves a mixture of 2 parts cream and 3 parts milk. How many pints of cream will it take to make 10 pints of the mixture?

71. A statement the meaning of which is not definite is said to be (?)
1 erroneous, 2 doubtful, 3 ambiguous, 4 distorted, 5 hypothetical.
CLINTON GENERAL VOCABULARY TEST FOR
HIGH SCHOOLS AND COLLEGES

by

R. J. Clinton
Oregon State College

FORM I

Name_________________________ Last name_________ First name_________ Middle initial

Age last birthday_________; Date of birth______________________________

Month______ Day_____ Year

School or College________________________

City________________________; State____________

Name of Teacher________________________

Grade or classification in school: (Draw a circle around one)

High School: Freshman Sophomore Junior Senior

College: Freshman Sophomore Junior Senior Graduate

Campus School Enrolled in________________________

How many term credits have you had in English?________________________

What occupation are you following or expect to follow?________________________

Date this test was taken________________________

Month______ Day_____ Year

DO NOT TURN THE PAGE UNTIL THE EXAMINER TELLS YOU TO DO SO

TO THE EXAMINER:

1. Distribute the tests with the direction not to open them.

2. See that all pupils are supplied with pencils or pens.

3. See that the students fill out the above title page.

When the students are through filling out the title page, say,
"This is a general vocabulary test. Work as rapidly and accurately as you can. The directions and samples are on the next page. Turn the page, GO!"
DIRECTIONS: From the group of four words or phrases in each line below, select the one that is most nearly like the word at the beginning of the line, underline it, and write its number in the parentheses at the right margin.

SAMPLES: 1 attain, 2 remit, 3 achieve, 4 attend-----(2) 1
2 climax 1 beginning, 2 excitement, 3 rapture, 4 culmination---(4) 2

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1 laborious 1 laboratory, 2 enjoyable, 3 misdirected, 4 toilsome------(4) 1
2 meditation 1 memory, 2 thought, 3 impulse, 4 belief----------------- 2
3 wearisome 1 persuasive, 2 subservient, 3 useless, 4 tiresome----------- 3
4 rare 1 interesting, 2 unusual, 3 rapid, 4 to jump------------------- 4
5 parcel 1 bundle, 2 parcelment, 3 express, 4 complement------------- 5
6 sculpture 1 scrupulous, 2 chisel, 3 form of art, 4 parchment------- 6
7 locust 1 bird, 2 loiterer, 3 locality, 4 insect---------------------- 7
8 falcon 1 wing, 2 hawk, 3 mineral, 4 mistake------------------------ 8
9 towed 1 whipped, 2 animal, 3 pulled, 4 hoisted--------------------- 9
10 somber 1 gloomy, 2 slumber, 3 sum up, 4 persistent-------------- 10
11 rivet 1 stream, 2 rivet, 3 metal pin, 4 hinge--------------------- 11
12 transfigure 1 punish, 2 inform, 3 picture, 4 transform----------- 12
13 ejected 1 shifted, 2 employed, 3 expelled, 4 praised------------- 13
14 benzine 1 magazine, 2 powder, 3 medicine, 4 volatile liquid----- 14
15 spare 1 transfer, 2 scanty, 3 tall, 4 room---------------------- 15
16 rye 1 cereal, 2 ugly, 3 flabby, 4 flax-------------------------- 16
17 superfluity 1 compilation, 2 fidelity, 3 excess, 4 measurement---- 17
18 disavowing 1 promising, 2 expressing, 3 flouncing, 4 disclaiming-- 18
19 expire 1 steeple, 2 terminate, 3 transact, 4 obviate------------- 19
20 writhe 1 twist, 2 fly, 3 ridicule, 4 persecute-------------------- 20
21 detrimental 1 to dotor, 2 additional, 3 injurious, 4 false------- 21
22 fantasy 1 mental image, 2 unhappiness, 3 novel, 4 error---------- 22
23 revenge 1 devastate, 2 recoco, 3 bedeck, 4 stimulate------------- 23
24 infallible 1 infantile, 2 unerring, 3 failing, 4 defective--------- 24
25 demobilize 1 disband, 2 police, 3 imprison, 4 organize--------- 25
26 worsted 1 linen, 2 silk thread, 3 wool yarn, 4 wasted------------ 26
27 immutable 1 heavy, 2 flowing, 3 unchangeable, 4 imitation------- 27
28 violation 1 vindication, 2 infringement, 3 disagreement, 4 creed-- 28
29 sanctity 1 security, 2 clearness, 3 holiness, 4 cruelty------------ 29
30 auxiliary 1 scout, 2 transfer, 3 aid, 4 necessity---------------- 30
31 molten 1 melted, 2 cold, 3 metal, 4 parboiled-------------------- 31
32 rustance 1 substance, 2 support, 3 treasure, 4 wealth----------- 32
33 havoc 1 hemlock, 2 trouble, 3 destruction, 4 place------------- 33
34 vain 1 mechanical device, 2 conceited, 3 lenient, 4 navel--------- 34
33 whim 1 delusion, 2 vision, 3 fancy, 4 disposition--------------- 35
35 refute 1 mitigate, 2 reverse, 3 mock, 4 disprove---------------- 36
37 morsel 1 drink, 2 food, 3 small piece, 4 morbid---------------- 37
38 residue 1 debt, 2 remnant, 3 residence, 4 sequence------------- 38
39 rovoro 1 revolt, 2 enlighten, 3 regard with reverence, 4 gild----- 39
40 apparition 1 castle, 2 storm, 3 friend, 4 phantom--------------- 40
41 segregate 1 secure, 2 center, 3 provide, 4 isolate------------- 41
42 taffeta 1 lace, 2 silk or linen goods, 3 tripod, 4 candy--------- 42
1 irremediable, 2 lawful, 3 incurable, 4 natural
2 irresponsible, 2 lawful, 3 incurable, 4 natural
3 assist, 2 endow, 3 opening, 4 entrance
4 assist, 2 endow, 3 opening, 4 entrance
5 contrast, 2 console, 3 deny, 4 concession
6 famous, 2 slander, 3 publicity, 4 cruelty
7 frivulous, 2 cruel, 3 lazy, 4 quere
8 trifling
9 to spray, 2 joyful, 3 succinate, 4 punish
10 to spray, 2 joyful, 3 succinate, 4 punish
11 transcribe, 2 receive, 3 entertain, 4 discharge
12 pensiveness, 2 keen enjoyment, 3 wittiness, 4 speed
13 vase, 2 trap, 3 filthy, 4 small bottle
14 revive, 2 repeal, 3 entertain, 4 reprove
15 entusiastic, 2 desirable, 3 desirable, 4 dull
16 alovitiate, 2 sorrowful, 3 arduous, 4 estrange
17 given to temper, 2 stormy, 3 cunning, 4 dark
18 ambitious, 2 quick, 3 weird, 4 cunning
19 scroecrow, 2 beast, 3 wretch, 4 enemy
20 liquid, 2 laughable, 3 opaque, 4 clear
21 join, 2 ambush, 3 lighten, 4 succeed
22 plentiful, 2 abrupt, 3 strong, 4 unhappy
23 insurance, 2 firmness, 3 likelihood, 4 certainty
24 tool, 2 danger, 3 vessel, 4 creation
25 substantial, 2 furnishing aid, 5 money, 4 flood
26 small insect, 2 song, 3 chalice, 4 farewell
27 officer, 2 sin, 3 jardiniere, 4 clamping device
28 manly, 2 good, 3 munificent
29 scroecrow, 2 beast, 3 wretch, 4 enemy
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97 officer, 2 sin, 3 jardiniere, 4 clamping device
98 manly, 2 good, 3 munificent
99 scroecrow, 2 beast, 3 wretch, 4 enemy
100 liquid, 2 laughable, 3 opaque, 4 clear
101 verdure 1 green vegetation, 2 vineyard, 5 pasture, 4 truth---( 131.
102 surfeit 1 servant, 2 pleasure, 3 excess, 4 enchant--------- 102.
103 coerce 1 compel, 2 cotton cloth, 3 mag, 4 obtrude--------- 103.
104 clandestine 1 country home, 2 unhappy, 3 secret, 4 clamorous-- 104.
105 inveeterate 1 modish, 2 insidious, 3 insolvent, 4 habitual--- 105.
106 irresolute 1 ignorant, 2 hesitating, 3 irresponsible, 4 young-- 106.
107 vendeo 1 magician, 2 villa, 3 merchant, 4 buyer-------- 107.
108 fraudt 1 disagreement, 2 ship, 3 laden, 4 heavy----------- 108.
109 pseudonym 1 false, 2 fictitious, 3 name, 4 legal suit, 4 pardon-- 109.
110 curnal 1 wealthy, 2 kind, 3 wasteful, 4 fleshly---------- 110.
111 volatile 1 combustion, 2 beverage, 3 changeable, 4 dangerous 111.
112 disbursemant 1 payment, 2 dismissal, 3 disavow, 4 negligence-- 112.
113 petiet 1 beautiful, 2 minor, 3 fruit, 4 haughty--------- 113.
114 hart 1 bird, 2 herb, 3 organ, 4 loose coat------------- 114.
115 frugal 1 frank, 2 economical, 3 excitable, 4 useless------ 115.
116 cardinal 1 principal, 2 eldest, 3 crest, 4 orthodox------ 116.
117 docile 1 exiled, 2 home, 3 tractable, 4 haughty-------- 117.
118 inundating 1 flooding, 2 checking, 3 flexible, 4 drying--- 118.
119 propensity 1 property, 2 likeness, 3 tendency, 4 prophesy-- 119.
120 gabardine 1 green, 2 monk, 3 silk, 4 loose coat---------- 120.
121 expedite 1 banish, 2 facilitate, 3 fluster, 4 excel-------- 121.
122 challis 1 cup, 2 figures, 3 chantry, 4 dress fabric----- 122.
123 concurrence 1 dominance, 2 agreement, 3 happen again, 4 contrast-- 123.
124 arduous 1 ardent, 2 fascinating, 3 laborious, 4 profound-- 124.
125 viands 1 food, 2 clinging vines, 3 gestures, 4 bands---- 125.
126 stratagem 1 coolness, 2 stratum, 3 artifice, 4 strife------ 126.
127 vacillate 1 vaccinate, 2 endure, 3 defeat, 4 wavering---- 127.
128 retrograde 1 renegade, 2 picture, 3 recede, 4 condemn--- 128.
129 extortionate 1 affectionate, 2 oppressive, 3 to plead, 4 lengthy-- 129.
130 rapacious 1 grasping, 2 rapid, 3 generous, 4 ungenerously-- 130.
131 fervor 1 violence, 2 heat, 3 happiness, 4 ambition-------- 131.
132 team 1 be energetic, 2 horses, 3 pair, 4 be prolific------- 132.
133 deputation 1 to defy, 2 novice, 3 delegation, 4 negotiation---- 133.
134 inmate 1 natural, 2 innate, 3 inclusive, 4 fanciful------ 134.
135 suavity 1 seriousness, 2 import, 3 sanctity, 4 urbanity---- 135.
136 salubrious 1 solitary, 2 wholesome, 3 common, 4 embellished-- 136.
137 remiss 1 negligent, 2 continued error, 3 return, 4 send----- 137.
138 league 1 longitude, 2 lengthy, 3 covenant, 4 plan-------- 138.
139 hennock 1 banal, 2 food, 3 crock, 4 hammock------------ 139.
140 respite 1 delay, 2 forgiveness, 3 relaxation, 4 providence-- 140.
141 opulent 1 opaque, 2 unsubstantial, 3 extreme, 4 wealthy--- 141.
142 descry 1 discern, 2 ridicule, 3 weep, 4 decry----------- 142.
143 amain 1 violently, 2 ship, 3 stagger, 4 compel---------- 143.
144 rendition 1 cache, 2 surrender, 3 program, 4 preparation-- 144.
145 pursuants 1 conformable, 2 to pursue, 3 clerk, 4 to serve---- 145.
146 extenuate 1 terminate, 2 to diminish, 3 to extend, 4 discredited-- 146.
147 scruple 1 coin, 2 fight, 3 weight, 4 valuable------------- 147.
148 couch 1 dismiss, 2 wood, 3 cover, 4 express------------ 148.
149 unqualified 1 wholly, 2 gifted, 3 unreserved, 4 measured---- 149.
150 onjoin 1 prohibit, 2 join, 3 entreat, 4 captivate----------- 150.
New Stanford Achievement Test
By Truman L. Kelley, Giles M. Ruch, and Lewis M. Terman

ADVANCED EXAMINATION: FORM W
FOR GRADES 4-9

Name ................................................ Grade ........... Boy or girl ...........
Age ........... When is your next birthday? ........... How old will you be then? ...........
Name of school .......................................... Date .....................................

<table>
<thead>
<tr>
<th>Test</th>
<th>Score</th>
<th>Age Equivalent</th>
<th>Grade Equivalent</th>
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<tr>
<td>2. Word Meaning</td>
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<td>3. Dictation</td>
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<td>7. Geography</td>
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<td>8. Physiology and Hygiene</td>
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<td>9. Arithmetic Reasoning</td>
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</table>

First record in this table the scores for Tests 1 to 10. Then find the Total Score. Then insert the scores for Total Reading and Total Arithmetic in the boxes to the left of the column headed "Score." For accuracy and convenience in recording the scores in the table in the left-hand margin of page 2, fold the page on the heavy line at the left of the profile chart and copy the scores from the above table (being careful to omit the Total Reading and Total Arithmetic).

To the Examiner. Do not administer this test without first reading carefully the Directions for Administering.
**EDUCATIONAL PROFILE CHART: NEW STANFORD ACHIEVEMENT TEST, ADVANCED EXAMINATION**

<table>
<thead>
<tr>
<th>Test 1</th>
<th>Test 2</th>
<th>Test 3</th>
<th>Test 4</th>
<th>Test 5</th>
<th>Test 6</th>
<th>Test 7</th>
<th>Test 8</th>
<th>Test 9</th>
<th>Test 10</th>
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</table>

*Grade defined as in Table 2 of the Directions for Administering.*

**Educational Ages above this point are extrapolated values.**

See Guide for Interpreting for explanation of vertical lines.
DIRECTIONS: Write JUST ONE WORD on each dotted line.

SAMPLE:
Dick and Tom were playing ball in the field. Dick was throwing the ball and... was trying to catch it.

1 Fanny has a little red hen. Every day the hen goes to her nest and lays an egg for Fanny to eat. Then she makes a funny noise to tell Fanny to come and get the...

2-3 Anna had never seen a squirrel in her life, although she had always wanted to very much. One day when she was playing under a tree she heard a funny noise over her head. She looked up, and what do you think she saw? Up there in the... was the very thing she had always wanted to see, a...

4-5 Jack ran into the playroom and got his top and drum. His mother said, "What are you going to do?" "I am going to... with the other boys,"... said.

6-7 When the old hen found a nice worm she would say, "Cluck! Cluck!" and the little chicks would come running to her. The... that got to her first got the... for its lunch.

8-9 The king gave a party for his baby daughter. All of the fairies came and brought gifts except one. That one was wicked and said that when the baby was fifteen years old she would fall asleep for a hundred years. It made the... very sad to think of any harm coming to his...

10-11 One day when Jane was sweeping she found a dime on the floor under the bed. They could not find out whose dime it was, so her mother gave it to her. Now, every time Jane... the floor she looks carefully under the bed for another...

12 Bert raised lettuce, peas, and radishes in his garden. He sold the lettuce and radishes and gave the... to his mother.

13-14 John's father hurried to his office soon after eating breakfast, but before going he told John to pull all the weeds in the garden and mow the lawn. When he returned that evening, after a hard day's work, he found the... still growing in the garden and the... uncut.

15-16 Mary's doll and picture book were quarreling. "Mary loves me better than she loves you," said the doll. "No, she loves me the better," said the picture book. When Mary heard them, she said, "You are both mistaken. I... one of you as much as the..."

17-18-19 When night came, I went into a cave where I thought I might rest in safety. I closed the narrow entrance of the cave with a rock to keep out the bears which were about. But I could not sleep for thinking of the danger that a... might be able to push the... away from the entrance to the...

20-21-22 Bessie hunted for a fairy everywhere, but finally, quite discouraged, she sat down and rested her tired little head against the big brown root of her favorite tree. It was such a friendly tree that it seemed there ought to be a fairy on every bough. She peeped to see and spied just one teeny-weeny fairy; but, as you know, even one fairy may be pretty nice company; so Bessie climbed the... and reached out to the... who walked right up her arm and sang a little song in her ear. Later Bessie told her mother all about it, and Mother said, "I guess you were..."

23-24 Whenever many men dwell together in fellowship, one must be leader and the others must yield him obedience or everything will go wrong. Thus thought the outlaws of Sherwood; so one day they met together and chose Robin Hood as their... When he had been chosen, they all took a great oath that they would... his commands.

25-26 In parts of Mexico water carriers are to be seen going to and from the fountain in the plaza with great jars of clay holding many gallons of water. There are no pipes or wells to supply the houses, and all the... used by the families has to be brought from the...
Herbert had three balloons, a red one, a blue one, and a yellow one. The red one burst. He gave the yellow one to his sister Ann. ____________ kept the ____________ one.

The smoke from the forest fires hung over the valleys for days, smothering the sun. Lamps had to be lighted at three in the afternoon. Conductors on trains carried lanterns all day to read the tickets of passengers. In short, day was turned into ____________.

It was more than a week before rains came and put out the ____________..

A Nevada schoolgirl once wrote, "A river is a dry sandy gulch in which there is sometimes water." This is not a bad description of a Nevada river, for in a desert country ____________ river beds are ____________ during most of the year.

Sand is rock ground fine. The miles of white sand that cover our beaches by the seashore have been made by the restless waves which in the course of long years have ____________ the ____________ into fine particles.

Introspection means looking inward and retrospection means looking back on things past. Consequently, if someone were telling of his experiences on a camping trip the year before, we would call it ____________ and not ____________.

While our earth has only one moon, there are other planets which are more favored. Some have two or three and Jupiter actually has nine. If there are people living on the planet Jupiter, they must find it rather beautiful having so many ____________ in the ____________ to look at.

Boys and girls know my name. And mothers and fathers, too. Big folks love me. You do, too. The first letters in the first four sentences of this paragraph spell my name; so write it here ____________ and not ____________.

Bacteria are of inestimable value to man. Many of our agricultural processes are vitally dependent upon their action. If all the ____________ were destroyed or ceased to act as they do now, our farming industry might be ____________.

The eighth-grade children have finished the term's work ahead of time. They do not want to study more arithmetic, except Ralph, who likes it; nor more composition, except Nora, who is writing all the time. Oliver, who wants to become an actor, suggests that the class give a play. As all the children like to see plays, the teacher agrees. It is arranged, therefore, that ____________ should write the play, that ____________ should play a leading part, and that ____________ should keep the accounts.

The way many English words are spelled is a puzzle and a mystery to the foreigner. When "bite" and "light" sound alike, why are they spelled so differently? A violinist "bows" before drawing his "bow" across the strings. A thousand other examples might be given. It would be simpler if words were ____________ the way they ____________.

The burro, a small pack animal, is humorously called the "Rocky Mountain Canary." The mountain country is so rough and the trails are so steep and narrow that many ____________ are used to carry the packs of the ____________. Every morning at sunrise they bray long and loud. This explains why they are called ____________.

50 Some historians believe that the spread of antislavery feeling among the people of the North previous to the Civil War was due less to the moral issue involved than to the fact that they recognized the system of ____________ as a menace to the industrial system of free labor.

51 The Stegomyia mosquito carries the germ of yellow fever but the Anopheles mosquito is the one which spreads malaria. In order to stamp out yellow fever the ____________ mosquito must be ____________.

53 Distant trees seem bluer than similar trees which are near. If you were to paint a picture, you would mix ____________ blue in the green for those trees which were near than you would for those which were ____________.
Coke is produced from coal but lead is a mineral which has been deposited in great quantities in some parts of the earth. It is evident that while we mine we could never mine... The Great Wall of China was built in the third century before Christ. If you were to follow the wall throughout its whole course, you would travel as far as halfway across the United States. The Great Wall of China is noteworthy because of its... Caution, when not present in excess, is a desirable trait. Often it saves one from disappointment or failure. Occasionally, however, one finds a person so extremely that his will is paralyzed and he is totally unable to set about any new undertaking. Too much is indeed often... Training for speed in reading is directly related to teaching pupils how to study effectively. The ability to read an assignment rapidly and at the same time get the main points is an essential factor in developing the habit of economical study. Two important aspects of reading are stated in this paragraph. One of these is the importance of reading; the other has to do with getting the... A whale is not a fish, even though it does live in water. A fish has no lungs, is cold-blooded, and absorbs oxygen from the water through its gills; but a whale is warm-blooded and has a genuine set of lungs. In consequence, in bodily structure the... is...like a shark, which is a true fish, than it is like a horse. The rise of any man from humble beginnings to the heights of success has always appealed to the imagination. Birth and fortune mean less now in helping a man toward a career than they did two centuries ago. This means that the ambitions of a boy are...possible of realization now than then. Rapid development of the lumbering industry of the Pacific Northwest has come about since 1880. At that time people began to realize that the bountiful...of Michigan, Wisconsin, and Minnesota were not inexhaustible and that a new...for lumber must be found. One advantage of rural life is the close contact with nature which country people enjoy. The children can roam about over the fields picking flowers and hunting for new and strange scenes. Boys can hunt, fish, and swim. Much of our best literature describes the joy of this...with...which country life provides. Bacteria have greater resistance to injurious influences than any other known organisms. However, most bacteria are killed like any other...by a brief exposure to...of 60°-65° centigrade. The great extent of the natural resources of America has induced too many of our people to regard nature rather than thrift as the source of wealth, and has led them to spend their efforts in...rather than creating. The gospel of conservation of all natural resources should be taught lest we all too soon exhaust our supply of them. One should, in so far as possible...the lumber, oil, and the mineral...of our nation. "Has not your teacher explained to you that if you do not know your arithmetic in this grade what is the chance for success in the next grade?" The preceding sentence as it stands is incorrect, but it can be made into a correct sentence by substituting "...have..." for "what is the." Although he carried stakes, measured distances, and kept his surveyor's notes with care, the beauty of the bough, not the strength of fiber of its wood; the color of the distant mountain, not its elevation; the evanescent spray and ever-changing wonder of the torrents, not their latent horsepower, enthralled him and showed him that engineering...the calling of his heart. "A member of the weaker sex made the eagle scream in her laudations of the father of his country." In plain English this is equivalent to, "A...George Washington."
DIRECTIONS: Draw a line under the word that makes the sentence true, as shown in the samples.

SAMPLES:
A rose is a box flower home month river
A roof is found on a book person rock house word

1. Ice is made of baskets bread plants water wood
2. A castle is a clock building path spirit wheel
3. Yesterday was a day drive general heart tree
4. A maiden is a bird boy girl king plant
5. A nest is a bird's egg family food home tree
6. A napkin is made of glass iron water cloth wood
7. A hungry person is most in need of company food rest sleep water
8. Folk means hall office kiss object people
9. Blood comes from bodies hair pictures silver wood
10. To be healthy is to be different grave well rich sick
11. A thing that is splendid is very cold good little thick narrow
12. A brake is part of a bag bridge car coat post
13. An umbrella is a danger meal native quarrel shelter
14. An onion is a pig fruit cook rat vegetable
15. To be content is to be lost near plain satisfied sure
16. To exclaim is to fight grant hurry listen speak
17. A thing that is evil is bad great good long new
18. A map is a chart fragment hinge rope vineyard

19. To labor means to add dress order work write
20. Moisture is commercial damp everlasting fiery goodly
21. A carol is a cargo drug dwarf prophecy song
22. Loyal means distant faithful furnish lean "sharp"
23. To be saucy is to be affectionate agreeable devoted dignified rude
24. Foggy means clear misty tough uneven varnished
25. A tradesman is a governor gypsy leader merchant president
26. A canal is much like a box crowd lake prince river
27. To plan is to banish bestow design betray defeat
28. To assist is to help judge run seek waste
29. I am able means I can drink move send tell
30. A glacier is made of fish ice rock soil
31. To replace is to blacken blanch restore thicken toll
32. A defect is a deck fault needle limb terror
33. To enlarge means to chisel deform expand lisp shorten
34. A sluggard is ambitious brave divine earnest lazy
35. Peculiar means brief dangerous erect steep odd
36. Gorgeous means frisky gigantic hereditary magnificent malicious
37. Flaxen-haired means adjacent blond filial impartial maternal
38. To accomplish means to begin do enjoy enter forget
39. A villain is a jungle leper minstrel scoundrel din

Go right on to the next column.
A rivet is much like a 
barrel bolt plow problem prophet

A lens is made of 
felt glass iron wood wheat

Barbarous means 
asleep fierce strict private regular

Destruction means 
feeling occasions ruin treasure union

An abode is a place where one 
creeps earns fails lodges whispers

Politeness is an example of 
gull hardness indulgence refinement surmise

To resist is to 
flatter flutter inquire oppose perish

A hillock is a 
memorial mound nerve knave patron

Incident means 
aid chamber character event each

A vulgar deed is 
base friendly honest nice princely

A communication is a 
creature creditor message palace pasture

To forewarn is to 
bewitch caution moisten mortgage recoil

Ruthless means 
marine martial merciless negative poetic

A joyless person is usually 
appropriate chilly clumsy profuse dejected

To approve of is to 
endorse expect fix increase wash

Imperial affairs concern 
cities garments nations machines patterns

A thing that is apparent is 
vacant evident lively military twisted

A collection is an 
aggregate artist umbrella officer auction

To reside is to 
ascend discover dwell offend repair

Forcible means 
bonny cloying energetic fatherless reddish

Loathing is a kind of 
dislike reverence swooning terror usurpation

Minimum means the 
largest least most newest oldest

Seasonable means 
dishonest economical silent fretful timely

To mingle is to 
blend sanction screech scurry

An expenditure refers to a 
drawing choice future mouse purchase

A hamlet is a 
city moon man village woman

External means 
luxurious mashed eternal outer undone

To obstruct is to 
advance check occupy owe pity

To detach is to 
chat clatter degrade sever verge

Emphatic means 
forcible frantic incurable pernicious reluctant

Alacrity means 
frailty grudge briskness humbleness levy

To appreciate is to 
help satisfy share value want

Matin means 
evening morning night noon afternoon

An affront is an 
address amusement insult approach applause

To be legitimate is to be 
hopeless imperfect indignant infinite lawful

Extremity means 
delay lying memory tip whisper

Void means 
cruel exact fierce useful empty

Ignoble means 
base friendly level locked native

Palpable means 
colored shameful evident soft heavy

End of Test 2. Look over your work.
| Sum  | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Score| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 |100|
| Sum  | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 |100|101|102|103|104|105|106|107|108|
| Score| 98 | 99 |100|101|102|103|104|105|106|107|108|109|110|111|112|113|114|115|116|117|118|119|120|121|122|123|124|125|126|

*Full score for easier sentences not dictated..............................................................

Number right in sentences dictated............................................................... 

| Sum  | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 |100|101|102|103|104|105|106|107|108|
|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Score| 98 | 99 |100|101|102|103|104|105|106|107|108|109|110|111|112|113|114|115|116|117|118|119|120|121|122|123|124|125|126|
DIRECTIONS: Draw a line under the word or phrase that makes the better sentence, as shown in the samples.

SAMPLES:

Apples are good.
He told me.

1. He isn’t any better than you.
2. He doesn’t know anything.
3. Please lay the book down.
4. He rang the bell.
5. I don’t like them apples.
6. The girl with flowers reminds me of you.
7. I am crazy about a good circus.
8. These things are a scandal.
9. That man has written three books.
10. Please, may I go to the movies?
11. The woman was almost drowned.
12. She looked beautifully today.
13. He is more braver than I.
14. The woman which you saw is my mother.
15. Had I been there, I would have gone.
16. He has fallen and hurt himself.

Go right on to the next column.
37 He had a date with the president.
38 It can hardly be true.
39 But don't forget, however, that he came.
40 He is too dull to learn anything.
41 Don't blame me for that.
42 It was you saw.
43 He is the ablest king in the world.
44 He had not been there long until I came.
45 He is enthusiastic about the idea.
46 We all fled from the enemy.
47 They both resemble each other.
48 The principal is in his office.
49 It is now evident why he left.
50 Ideals should be contracted early.
51 They all unanimously agreed to go.
52 The school of fish swam into the net.
53 My parents were equally anxious.
54 Minors are not fit to vote.
55 False reports have injured his character.

56 Why cherish a vain hope?
57 I am in search of a friend.
58 Send this memorandum to the president.
59 They arrived with hardly any baggage.
60 I wish it were true.
61 We must choose between the old or the new.
62 He has an envious reputation.
63 She has often sung in the choir.
64 He will be glad to hear it.
65 The climate here is healthful.
66 Every student carried his own books.
67 This is the universal opinion of all scientists.
68 He got the better of me in the argument.
69 Was it him?
70 He is a respectable citizen.
71 There are fewer people here today.
72 Everyone gave himself freely.
73 He is fearless; nothing daunts him.
74 Each of the boys is going.

End of Test 4. Look over your work.
DIRECTIONS: Draw a line under the word that makes the sentence true, as shown in the samples.

SAMPLES:
A giant is a big dog man boat
The Bible is the name of a place country book

1. “Sleeping Beauty” is a story of fairies horses rabbits
2. The glass slipper belonged to Cinderella Goldilocks Rebecca
3. Whenever King Midas touched anything, it turned to gold money silver
4. “The Little Lame Prince” tells about a brownie giant fairy
5. “Ring Out, Wild Bells” is about a fire cowbells New Year’s
6. Robin Hood was an archer Indian elf
7. The number of apostles was 3 7 12
8. After death the Indians went to the Styx Elysian Fields Happy Hunting Grounds
9. A gnome is a kind of dwarf giant priest
10. Goliath was slain by David Joseph Samson
11. Huckleberry Finn’s chum was Artful Dodger Black Dog Tom Sawyer
12. The theme of “Uncle Tom’s Cabin” is poverty slavery taxation
13. The Christian religion originated with the Greeks Jews Romans
14. The author of “Evangeline” is Bryant Longfellow Whittier
15. A person who sought for the Golden Fleece was Baldor Jason Siegfried
16. The people Moses led across the Red Sea were Arabs Hebrews Mohammedans
17. William Tell was an archer orator officer
18. The home of the Greek gods was Asgard Mount of Olives Olympus
19. “Little Women” was written by Sewell Eliot Alcott
20. Long John Silver is a character in “Kim” “Robin Hood” “Treasure Island”
21. The Pharaohs were rulers of Egypt Greece Persia
22. When the Nürnberg stove was opened, in it was found a boy paper treasure
23. The Greek known as the crafty was Achilles Ajax Ulysses
24. Don Strong of the Wolf Patrol was a boy scout forest ranger spy
25. “Open Sesame” was said by Aladdin Ali Baba Sindbad
26. Rebecca of Sunnybrook Farm lived with her aunts mother sisters
27. The queen of the gods was Aphrodite Diana Juno
28. “Hamlet” was written by Boswell Marlowe Shakespeare
29. “Rab and His Friends” tells about a dog horse wolf
31. Tom Sawyer lived by the Mississippi Delaware Columbia
32. Penrod’s companion was Harold Sam Jack
33. A character in “Hiawatha” is Crowfoot Minnehaha Pocahontas
34. A son of Eve was Abel Esau Isaiah
35. “Treasure Island” tells about Black Dog Fagin Miss Hazy
36. “The Odyssey” was written by Homer Milton Virgil
37. “The Great Stone Face” was written by Cooper Hawthorne Stevenson
38. Katrinka lived in Holland Russia Switzerland
39. David Copperfield was a schoolboy soldier statesman

Go right on to the next column.
40 King Arthur was most famous for his beautiful wife chivalry wars
41 “The Call of the Wild” is a story of a deer dog wolf
42 The Mohammedan Bible is the Bhagavad-Gita Koran Zend-Avesta
43 The person who brought about the ruin of Samson was Delilah Esther Ruth
44 “Beautiful Joe” is the story of a boy dog horse
45 Scrooge is a character in “Oliver Twist” “David Copperfield” “A Christmas Carol”
46 Shylock is a character in “Hamlet” “King Lear” “Merchant of Venice”
47 The Little Colonel was Elsie Joyce Lloyd
48 Sir Galahad was renowned for fierceness purity strength
49 “Hamlet” is a comedy tragedy pantomime
50 The “Man for the Ages” was Washington Lincoln Wilson
51 “Oliver Twist” tells of life in the country navy slums
52 Cooper wrote about animals fairies Indians
53 Cherubim are a kind of angel chariot throne
54 “Crossing the Bar” was written by Goldsmith Keats Tennyson
55 “The Covered Wagon” was written by Hough Mark Twain Walpole
56 “Sir Patrick Spens” is a ballad lyric myth
57 A birthright was sold for a mess of pottage by Esau Jacob Joseph
58 “The Wizard of Oz” was written by Baum Barrie Kipling
59 The Mohammedan religion originated in Arabia Egypt Persia
60 Barbara Frietchie sympathized with the English South Union

Go right on to the next column.

61 “Nevermore” was said by the raven red men parrot
62 “The Last of the Mohicans” was Hiawatha Mowgli Uncas
63 The glad girl was Pollyanna Rebecca Sara Crewe
64 The “face that launched a thousand ships” was that of Dido Guinevere Helen
65 Coleridge wrote “Ancient Mariner” “Hiawatha” “Thanatopsis”
66 Jules Verne wrote stories about animals criminals imaginary inventions
67 Lorna Doone was rescued by a knight John Ridd Robin Hood
68 The exclamation made famous by Longfellow is Bravo! Eureka! Excelsior!
69 “Wild Animals I Have Known” tells about Lobo Moby Dick Yan
70 Whittier wrote “Maud Muller” “The Bells” “Michael”
71 The Deacon’s Masterpiece was a boat sermon carriage
72 Burns wrote “The Lady of Shalott” “Tam O’Shanter” “The Courtin’”
73 One of the three musketeers was Bertrand Richelieu Aramis
74 The Spy was Dunwoodie Harvey Birch James Morrison
75 The author of “Paradise Lost” was Browning Holmes Milton
76 The author of “Lay of the Last Minstrel” was Scott Shakespeare Tennyson
77 “The Prince and the Pauper” tells about Edward Tudor James Stuart Richard III
78 Gethsemane was a garden god mountain
79 “Lucy Gray” was written by Longfellow Tennyson Wordsworth
80 The Furies came from the blood of Jupiter Uranus Vulcan

End of Test 5. Look over your work.

<table>
<thead>
<tr>
<th>Number right</th>
<th>Number wrong</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ 2 =</td>
<td></td>
</tr>
</tbody>
</table>


DIRECTIONS. Draw a line under the word or phrase which makes the sentence true.

1. The queen who gave money to Columbus was __Victoria Mary Isabella__
2. A leader of the Quakers was __Stuyvesant Lord Baltimore William Penn__
3. Daniel Boone explored the region of __Oregon Texas Kentucky__
4. Robert Fulton invented the __steamboat ocean cable steam engine__
5. One of the vessels of Columbus was named __isabella Santa Maria Black Hawk__
6. Early California settlers from our eastern states were seeking __liberty lands gold__
7. Mount Vernon was the home of __Jefferson Washington Lincoln__
8. The Mississippi was discovered by __Balboa DeSoto Vespucci__
9. Eli Whitney is noted for his invention of the __spinning jenny cotton gin telegraph__
10. An example of a county officer is __mayor alderman sheriff__
11. The early Spanish explorers sought chiefly __gold liberty tobacco__
12. Coinage refers to __religion money warfare__
13. The first white man to see the Pacific Ocean was __Balboa Cabot Vespucci__
14. The second war between our country and England began in __1812 1848 1865__
15. New York was at first called __New Haven Schuylkill New Amsterdam__
16. Washington’s winter quarters for 1777–78 were at __Trenton Philadelphia Valley Forge__
17. Virginia was settled by __English French Spanish__
18. The Civil War practically ended with the surrender of __Lee Jackson Johnston__
19. The Armistice was signed on __Nov. 11, 1918 Nov. 21, 1918 Dec. 22, 1918__
20. Foreigners can become citizens by __habeeus corpus naturalization purchase__
21. The Wright Brothers remind us of __airplanes steel manufacturing tariff laws__
22. Florida was first explored by __DeSoto Balboa Ponce de Leon__
23. The Quakers founded colonies in __Virginia Massachusetts Pennsylvania__
24. The appearance of a city is helped most by __billboards shade trees telegraph poles__
25. Ballots are used in __warfare fishing elections__
26. Roger Williams was a __colonizer judge merchant__
27. Henry Clay was a great __orator merchant inventor__
28. The power of levying taxes is reserved to __the President Congress the Cabinet__
29. Labor unions enforce their demands by the __strike referendum tariff__
30. Perry was a hero of the __World War Civil War War of 1812__
31. Alsace-Lorraine is in __Europe Asia South America__
32. An example of an elected officer is a __Congressman Supreme Justice postmaster__
33. The Pueblo Indians were found in the __Atlantic states Northeast Southwest__
34. A traitor of the Revolutionary War was __Arnold Hale Allen__
35. The Spanish fleet, the Armada, was destroyed by __Portugal France England__
36. Foch was a general for the __English French Germans__
37. Lincoln was assassinated in __1861 1863 1865__
38. The right to vote in the United States is denied to __women non-taxpayers criminals__
39. The battles of Lexington and Concord were fought in __1620 1775 1812__
40. “The Star-Spangled Banner” was written by __Alcott Burns Key__

Go right on to the next column.
41 The number of amendments to the Constitution in 1929 was 13 16 19
42 The Monroe Doctrine deals with foreign colonization in Africa Asia America
43 Carranza was a Mexican Russian German
44 Slidell's proposals might have prevented the Mexican War Civil War World War
45 Clara Barton is remember as a writer singer nurse
46 Hamilton was killed in a duel with John Hay Aaron Burr Benedict Arnold
47 Goethals reminds us of the World War airplane Panama Canal
48 A German submarine sank the Lusitania Titanic Maine
49 Grant's first campaign in the Civil War was in Virginia Maryland Tennessee
50 The Ordinance of 1787 provided for war a territorial policy a big navy
51 The number of judges in the United States Supreme Court is 6 9 12
52 Jefferson was followed as President by Madison Monroe Adams
53 The amendment giving women the right to vote was the 10th 18th 19th
54 Truckee-Carson is the name of a tariff law an irrigation project a treaty
55 Conservation of forests suggests to us the name of Wiley Goethals Pinchot
56 The U.S. Army in Europe at the end of the World War was in millions 1 2 3 4
57 The last Federalist President was Washington Adams Jefferson
58 Industrial pools are something like factories trusts railroads
59 The United States Supreme Court makes laws repeals laws interprets laws
60 After the World War Poland became a republic a monarchy an aristocracy
61 The negro population of the United States in 1920 in millions was 1 10 25
62 The Supreme Court cannot try cases of impeachment murder arson
63 One of the greatest of the Abolitionists was Jackson Garrison Clay
64 In 1815 European monarchs organized the Entente League of Nations Holy Alliance
65 England's answer to the Boston Tea Party was a heavy tax tariff act blockade
66 The first French colonies in America were founded by Cartier Champlain LaSalle
67 The power of levying duties belongs to the President Supreme Court Congress
68 Corrupt officials are often checked by the recall referendum initiative
69 The national government closely regulates railways steel manufacturing farming
70 Justices of the Supreme Court receive office by election inheritance appointment
71 The New England Confederation did not include Plymouth Salem Rhode Island
72 The right of voters to propose new laws is called the initiative referendum recall
73 The raid at Harper's Ferry was led by Scott Davis Brown
74 The Boxers were people of France Italy China
75 A leader in nullification was Maryland Missouri South Carolina
76 A famous educator was Horace Mann Eugene V. Debs William H. Seward
77 In 1860 our largest city was Boston Philadelphia New York
78 The United States entered the World War in 1914 1917 1918
79 Marconi is the inventor of the submarine printing press radio
80 A famous seaport of 1500 was Mecca Genoa Liverpool

End of Test 6. Look over your work.

Number right.............
Number wrong............. ÷ 2 = .............
Difference.............
TEST 7. GEOGRAPHY

DIRECTIONS: Draw a line under the word which makes the sentence true.

1. The sleds of the Eskimos are drawn by women horses dogs
2. The warmest season of the year in the United States is spring summer autumn
3. An important river of North America is the Mississippi Volga Plata
4. The month before November is October April September
5. Washington, D.C., is connected with mining shipping government
6. The largest divisions of land are called islands oceans continents
7. The nation using the most automobiles is Germany Great Britain United States
8. One of the principal exports of China is tea coffee wheat
9. Pearls are obtained from ivory mines oysters
10. A state producing many grapes is Idaho California South Dakota
11. Cement is made from coke iron limestone
12. A state largely bounded by water is Vermont Minnesota Florida
13. Paper comes chiefly from mines forests animals
14. Beets are used for making catsup sugar jellies
15. The ocean surrounding the North Pole is the Arctic Indian Antarctic
16. The regular rising and falling of oceans is called ocean currents tides geyser
17. A state having a very warm climate is Texas Oregon Wisconsin
18. A chief export of Japan is machinery silk meats
19. The zone nearest the poles is the frigid temperate torrid
20. A city noted for the manufacture of automobiles is Cincinnati Chicago Detroit

Go right on to the next column.

21. A state located in the mountain region is Iowa Colorado Michigan
22. Liverpool is a city of England France Spain
23. A country near the equator is Brazil United States Russia
24. The smallest continent is Australia Europe Africa
25. A valuable ornamental wood is mahogany pine spruce
26. A leading manufacturing state is Wyoming Massachusetts Texas
27. Many ships going from Cuba to New York carry steel sugar clothing
28. The Pyramids are located in Egypt Morocco Persia
29. Australia is a possession of Canada Great Britain United States
30. The country ranking highest in cotton production is Russia China United States
31. The ocean between the United States and China is the Atlantic Pacific Arctic
32. A principal crop of Russia is sugar cane wheat rice
33. A country that has no seaport is Greece Belgium Switzerland
34. A great wheat market is San Francisco Kansas City Columbus
35. Chicago has become a large city chiefly because of its soil scenery location
36. The earth rotates on its axis path orbit
37. A country in which very few people can read and write is Persia Holland Denmark
38. Deltas are formed by winds ocean currents rivers
39. Longitude is measured in inches miles degrees

Go right on to the next page.
A man who searches for minerals is called a prospector.

The most important kind of fishing on the Pacific coast is salmon.

The highest mountains in North America are the Rockies.

The smallest states in the Union are found in the West.

The Volga is in Russia.

An instrument which works by magnetism is the compass.

An important farm crop of the Pacific states is corn.

A product of quarries is granite.

A rich mining country is Argentina.

Much African territory is controlled by Italy.

A clothing material coming from plants is mohair.

The chief corn-producing country is the United States.

The Strait of Dover separates England from Scotland.

A lake port of the United States is Kansas City.

The rainfall required for wheat raising is very light.

The largest city in South America is Buenos Aires.

Apples are a leading product in California.

The Volga is in Russia.

An instrument which works by magnetism is the compass.

A clothing material coming from plants is mohair.

The chief corn-producing country is the United States.

The Strait of Dover separates England from Scotland.

A pest attacking apple trees is the boll weevil.

Rotation of the earth divides time into days.

The greatest number of degrees of longitude is 360.

The most densely populated part of Europe is the Eastern.

Go right on to the next column.
DIRECTIONS: Draw a line under the word or phrase which makes the sentence true.

1. Teeth should be cleaned
   once a week  twice a week  twice a day

2. The heart acts much like a
   camera  pump  sieve

3. One of the warmest kinds of clothing is
   linen  cotton  wool

4. A poor food for a school child's breakfast is
   tea  milk  toast

5. The brain is located in the
   head  abdomen  chest

6. We do not have to learn to
   write  swallow  read

7. Dusty air is dangerous because it carries
   carbon dioxide  oxygen  germs

8. Windows in sleeping rooms should be
   closed  slightly open  fully open

9. A good food for a child's breakfast is
   cabbage  prunes  lamb chops

10. Colds are passed from one person to another by
    germs  drafts  mosquitoes

11. The most nearly ideal food is probably
    eggs  potatoes  milk

12. Lockjaw often results from wounds made by
    rusty nails  needles  glass

13. The lungs take from the air
    carbon dioxide  nitrogen  oxygen

14. If your clothing catches on fire, you should
    run  wrap in a rug  call fire department

15. The outer coat of a tooth is made of
    dentine  enamel  bone

16. The stomach is part of the system of
    digestion  nervous control  muscular control

17. A disinfectant is used to
    kill germs  flavor food  stop headaches

18. A food containing much starch is
    fish  bread  eggs

19. Malaria is carried by
    pork  flies  mosquitoes

20. Water may be entirely freed from disease
    germs by
       filtering  freezing  boiling

   Go right on to the next column.

21. The temperature of a healthy body is about
    32°  98°  212°

22. A very efficient antiseptic for a wound is
    iodine  turpentine  soda

23. An example of an alcoholic drink is
    brandy  coffee  soda-water

24. One of the skin senses is
    pressure  taste  light

25. Pneumonia is a disease of the
    lungs  heart  brain

26. The drug in tobacco is
    alcohol  opium  nicotine

27. Inflamed eyes are often relieved by
    boric acid  weak vinegar  carbolic acid

28. A person's heart is about the size of
    his head  an egg  his fist

29. The best time for a cold bath is
    in the morning  at night  when tired

30. Tonsillitis is caused by
    cold air  mouth breathing  germs

31. Constipation often causes
    death  insanity  headaches

32. The vertebrae enclose the
    brain  spinal cord  vital organs

33. The liver is part of the
    digestive system  nervous system  circulatory system

34. The general location of the kidneys is in the
    back  throat  chest

35. A food rich in mineral salts is
    vegetables  bread  butter

36. Carbon dioxide is given off largely through
    the
       kidneys  skin  lungs

37. The usual treatment for malaria is
    strychnine  atropin  quinine

38. Insects can often be removed from the ear
    by
       sweet oil  camphor  iodine

39. Compared with inhaled air, exhaled air has
    more
       oxygen  carbon dioxide  nitrogen

40. The joints are held together by
    nerves  bones  ligaments

Go right on to the next page.
### TEST 8. PHYSIOLOGY AND HYGIENE—Continued

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Answers</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>The bronchial tubes go to the heart, kidneys, lungs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>A good heat-producing food is lettuce, pork, carrots</td>
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<tr>
<td>43</td>
<td>An example of a simple reflex is sneezing, sleeping, walking</td>
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<tr>
<td>44</td>
<td>The green color of leaves is due to water, chlorophyll, starch</td>
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<tr>
<td>45</td>
<td>The biceps is the name of a tooth, bone, muscle</td>
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<td></td>
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<tr>
<td>46</td>
<td>Starch is changed into sugar by the pepsin, bile, saliva</td>
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<td></td>
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<tr>
<td>47</td>
<td>Uric acid and urea are removed from the blood by the skin, lungs, kidneys</td>
<td></td>
<td></td>
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<tr>
<td>48</td>
<td>The tissue-builders among foods are the starches, fats, proteins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Rabies (hydrophobia) is often caused by rusty nails, swimming, dog bites</td>
<td></td>
<td></td>
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<tr>
<td>50</td>
<td>Yeast is a drug, an animal, a plant</td>
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<td></td>
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<tr>
<td>51</td>
<td>The seat of consciousness is the medulla, cerebrum, cerebellum</td>
<td></td>
<td></td>
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<tr>
<td>52</td>
<td>The scavengers of the body are the glands, kidneys, white corpuscles</td>
<td></td>
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<tr>
<td>53</td>
<td>The calories of food needed daily by a working man are about 100, 400, 4,000</td>
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<td></td>
</tr>
<tr>
<td>54</td>
<td>Building material and energy are obtained from nutrients, toxins, tissues</td>
<td></td>
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<tr>
<td>55</td>
<td>The color of the skin is due to pigments, minerals, impurities</td>
<td></td>
<td></td>
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<tr>
<td>56</td>
<td>The air passage into the lungs is called the pleura, thoracic cavity, trachea</td>
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<td></td>
</tr>
<tr>
<td>57</td>
<td>Much fat is found in the dermis, epidermis, subcutaneous layer</td>
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</tr>
<tr>
<td>58</td>
<td>Involuntary muscles control movements of the heart, legs, arms</td>
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<tr>
<td>59</td>
<td>The chief function of the spinal cord is conduction, sensation, thinking</td>
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<tr>
<td>60</td>
<td>Oxygen is carried principally by the nerves, white corpuscles, red corpuscles</td>
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<td></td>
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<tr>
<td>61</td>
<td>The color of the eyes is due to the iris, retina, pupil</td>
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<td></td>
</tr>
<tr>
<td>62</td>
<td>The part of the body weight made up by the muscles is about 1/10, 2/5, 3/4</td>
<td></td>
<td></td>
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<tr>
<td>63</td>
<td>The collar bone is also called the tibia, scapula, clavicle</td>
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<tr>
<td>64</td>
<td>The temperature of air appears to depend partly upon humidity, illumination, weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>The percentage of deaths caused by disease germs is about 0, 15, 50</td>
<td></td>
<td></td>
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<tr>
<td>66</td>
<td>An organ which excretes water from the body is the stomach, liver, skin</td>
<td></td>
<td></td>
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<tr>
<td>67</td>
<td>Bone is an example of an organ, a cell, a tissue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>The lean meat of an animal is muscle, cartilage, tendon</td>
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<tr>
<td>69</td>
<td>The auditory nerve enters the inner ear, outer ear, middle ear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Yeast acts on sugar to form alcohol, starch, molds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>A food which contains most of the vitamins is tomatoes, butter, polished rice</td>
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<tr>
<td>72</td>
<td>Squinting is a defect of the eye muscles, lens, nerves</td>
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</tr>
<tr>
<td>73</td>
<td>Sliding joints are found in the shoulder, knee, ankle</td>
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<tr>
<td>74</td>
<td>Protruding eyes sometimes indicate tuberculosis, cancer, goiter</td>
<td></td>
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</tr>
<tr>
<td>75</td>
<td>The ciliary muscles are located in the ear, arm, eye</td>
<td></td>
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<tr>
<td>76</td>
<td>The disease caused by the trichina worm is often carried by flies, pork, olives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>77</td>
<td>The length of the small intestine is about 5 ft., 12 ft., 22 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>The thoracic duct carries lymph, oxygen, blood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>The irregular bones of the ankles are called tarsals, phalanges, carpals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Reflexes usually start in the brain, spinal cord, sense organs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Test 8. Look over your work.

**Number right**

**Number wrong**

**Difference**
DIRECTIONS: Find all the answers as quickly as you can. Write the answers on the dotted lines. Use the margins to figure on.

1. How many are 5 birds and 4 birds?
   Answer...

2. Jack had 15 marbles and Bill gave him 6 more. How many did he then have?
   Answer...

3. There are 9 birds in one flock and 8 in another. How many are there in both flocks together?
   Answer...

4. Martha has 7 cents, Maude has 8 cents, and Sarah has 6 cents. How many cents have they together?
   Answer...

5. Tom had $17, but Jane had only $8. How many more dollars had Tom than Jane?
   Answer...

6. Oranges cost 5 cents each. At that rate, what will a half dozen cost?
   Answer...

7. One day Ruth promised to pick 15 quarts of berries for her mother. By noon she had picked 8 quarts. How many quarts must she pick in the afternoon?
   Answer...

8. Tom’s mother gave him 75 cents for groceries. He received 13 cents in change. How much did the groceries cost?
   Answer...

9. At 10 o’clock, Mae went to her friend’s home with permission to stay five hours. At what time should she come home?
   Answer...

10. Bert had 10 cents to spend for marbles. He paid 2 cents for one and 3 cents for another. How many marbles at 1 cent each could he buy with the remainder?
    Answer...

11. Martha has saved $3.75. How many dollars more does she need to buy a coat which costs $45.75?
    Answer...

12. At a sale, five-cent candy bars were sold at the rate of 3 for a dime. How many should Maude get for 30 cents?
    Answer...

13. A plasterer worked 7 hours a day for 5 days. How much did he receive for his work if he charged $2 an hour?
    Answer...

14. Kate pulled 48 radishes from her garden to sell. She put them into bunches of 12 radishes each. At 5 cents a bunch, how much should she get?
    Answer...

15. The scale on an automobile road-map shows that 1 inch represents 20 miles. How far apart are two towns that are 2 1/2 inches apart on the map?
    Answer...

16. Mr. Brown sold 11 calves for $209. What was the average price per calf?
    Answer...

17. Ellen used 24 inches of ribbon in trimming a Christmas wreath. What part of a yard did she use?
    Answer...

18. The trail to camp is 6 1/4 miles long. How far are some boys from camp who have traveled 4 3/4 miles along the trail toward camp?
    Answer...

19. Candy was sold in 1/4 pound bags for 20 cents each. At the same rate what would a pound and a half cost?
    Answer...

20. Harry worked from 9 o’clock in the morning until 5 o’clock in the afternoon except for a half hour at lunch time. How much should he receive, if he charged 30 cents an hour?
    Answer...

Go right on to the next page.
21. Frances sold $156 worth of books. She received a commission of 40%. How much did she earn?

Answer: 

22. In a class of 38 pupils, only 19 had perfect attendance records for a month. What per cent of all the class had perfect attendance records?

Answer: 

23. If a man uses 25 gallons of gasoline in driving 375 miles, how far can he drive on 8 gallons, assuming that he will obtain the same mileage per gallon?

Answer: 

24. When $3 will buy 5 yards of ginghamp, how much will 7 yards cost?

Answer: 

25. John buys papers for $1.80 per hundred and sells them at 3 cents each. How much does he make on 250 papers?

Answer: 

26. How much cheaper is a bill of $100 worth of goods bought at a 20% discount than one of the same amount bought at two successive discounts of 10% and 10%?

Answer: 

27. A man's automobile will go 110 miles on 10 gallons of gasoline. If gasoline costs 22 cents per gallon, what is the cost of the gasoline per mile?

Answer: 

28. Ice is .92 as heavy as water. A cubic foot of water weighs 62.5 lbs. What is the weight of a cubic foot of ice?

Answer: 

29. If 6 men can build a house in 180 days, how long will it take 8 men to build it?

Answer: 

30. A broker charges $25 commission on every sale, plus 5% on all over $200. What would be his commission on a 500-dollar sale?

Answer: 

31. Fred will sell his bicycle for $24. That is ¼ less than it cost him. What did it cost him?

Answer: 

32. How much more is earned each day by a man working 6 days for $45 than by a man working 6 days for $32.40?

Answer: 

33. How many dollars' worth of merchandise must a clerk sell at a commission of 2½% to earn a salary of $1,000 a year?

Answer: 

34. A train makes a run of 159 miles in 7 hours. One trip it was delayed and made only 63 miles the first 4 hours. At what average rate per hour must it go the remainder of the distance in order to arrive on time?

Answer: 

35. A certain house was assessed at $5,000. The tax on it was $125. What was the tax rate?

Answer: 

36. Tulip bulbs should be planted 4 to the square foot. A square plot should be how many feet on a side in order to hold 36 bulbs?

Answer: 

37. What actual rate of interest would be obtained if you bought 6% preferred stock at $75 per share? (Par value $100.)

Answer: 

38. For $90 each a man bought 5 shares of a preferred stock paying 5%. (Par value $100.) After his first dividends he sold his stock for par value. Ignoring brokerage charges, how many dollars did he make on the transaction?

Answer: 

39. If they have the same thickness, a pancake 6 inches in diameter is how many times as large as one 3 inches in diameter?

Answer: 

40. A house and lot were valued at $5,000. The taxes amounted to $60 a year. It cost $200 annually for depreciation and incidental expenses. For what must it rent per month in order that the owner may clear 8 per cent on its value?

Answer: 

End of Test 9. Look over your work.
TEST 10. ARITHMETIC COMPUTATION

DIRECTIONS: Get the answers to these examples as quickly as you can without making mistakes. Look carefully at each example to see what you are to do.

Begin here.

(1)  5 + 3 =
    Add
    0
    4
    4
    3

(6)  Subtract
    17
    3

(7)  Subtract
    12
    4

(8)  Add
    24
    7

(9)  Subtract
    89
    76

(10)  4 \times 8 =
      2 \times 6

(11)  Subtract
      895

(12)  Add
      876542

(13)  Subtract
      754290

(14)  6 \times 7 =
      452

(15)  Multiply
      7 \times 56

(16)  8 \div 4 =

(17)  3 \times 14.1

(18)  9 \div 77
      1000
      425

(19)  Subtract
      3 \times 14.1

(20)  Subtract
      \%

(21)  \%

(22)  \% \times \% =
      52 \frac{1}{4}
      27 \frac{7}{8}

(23)  Subtract
      35 \frac{1}{4}

(24)  Add
      37 \times 5359

(25)  3 \times 14.1

Go right on to the next page.
(26) \( \frac{1}{4} \times \frac{3}{4} = \)

(27) Add

(28) Subtract

(29) Add

\( \frac{7}{8} \)

\( \frac{3}{4} \)

\( \frac{19}{4} \)

\( \frac{129}{4} \)

---

(30) Subtract

(31) Subtract

(32) Add

(33) \( \frac{3}{4} \div \frac{3}{4} = \)

\( 7\frac{3}{4} \)

\( 3\frac{1}{4} \)

\( 5\frac{3}{4} \)

\( 1\frac{5}{4} \)

\( 2\frac{1}{4} \)

---

(34) Subtract

(35) \( \% \div 5 = \)

(36) Subtract

(37) \( \frac{2}{5} + \frac{3}{5} + \frac{1}{5} = \)

\( 5\frac{5}{4} \)

\( \% \)

\( 1\frac{8}{4} \)

\( 2\frac{4}{5} \)

---

(38-39) HEIGHT IN FEET OF FAMOUS WATERFALLS

According to the graph, what is the approximate height in feet of

Niagara

Upper Yosemite

---

(40) \( 65.32 - 47.2 = \)

(41) Subtract

(42) \( 6.2 - 3.895 = \)

(43) \( \% + \frac{2}{5} + \frac{1}{5} = \)

\( 46\frac{3}{4} \)

\( 52\frac{3}{4} \)

---

(44) Multiply

(45) Subtract

(46) Sales amount to $5240.

Commission rate is 10%.

Find amount of commission.

Answer =

Turn the page and go right on.
Add 3 Tons 1000 lb. 4 Tons 500 lb. 7 Tons 1750 lb. 2 Tons 800 lb.

\[ \frac{\%}{\text{\%}} \]

\[ \frac{3}{40} \]

\[ \frac{4.65}{\text{per cent of 15.50?}} \]

\[ \begin{array}{c}
239 \) 144834 \\
252)65128 \\
\end{array} \]

\[ (4)^2 = \]

\[ -9 \]

\[ -8 \]

\[ \text{Number} = \]

\[ 45 \text{ is } 15\% \text{ of what number?} \]

\[ \text{How many degrees are there in angle } BAC? \]

\[ \text{Find the value of } F \text{ in the following expression if } k \text{ equals 8 and } h \text{ equals 5.} \]

\[ F = \frac{k h^2}{4} \]

\[ \text{Find the volume of this figure.} \]

\[ \text{Simplify the following expression:} \]

\[ 8x + 6y - (2x - 3y) \]

End of Test 10. Look over your work.
IOWA SILENT READING TEST

By H. A. Greene
Director, Bureau of Educational Research and Service, University of Iowa

A. N. Jorgensen
Professor of Education, University of Buffalo

and V. H. Kelley
Director, Training School, Arizona State Teachers College

TEST: FORM B (Revised)

For High Schools and Colleges

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Sex ................. Date ................. 19 .... Teacher .........................

School .................................... City and State ................................

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TEST 1. PARAGRAPH MEANING

PART A. SCIENCE

DIRECTIONS. This test of paragraph meaning is given in two parts. Read the accompanying article on "Rubber" through once very carefully before attempting to answer any of the questions about it. Then you are to answer the questions on page 3 by writing in the parentheses after each question the number of the bracketed passage in the article which contains the correct answer. You may re-read parts of the article if necessary. The first question is answered correctly. Answer the other questions in a similar manner.

RUBBER

Rubber is a substance composed of carbon and hydrogen, obtained from a milky liquid known as latex, which is found in the roots, stems, branches, leaves, and fruit of a wide variety of trees growing for the most part in the tropics. The milky juice or latex is not the true sap, but a secretion which does not seem to be essential to the life of the plant. If this liquid is allowed to stand for a few hours, the particles of rubber rise to the surface. The doughy mass thus obtained can easily be rolled into a sheet or other convenient form. If it is allowed to dry, it loses its doughy character and becomes the firm, elastic solid known as raw or crude rubber.

In whatever form the crude rubber comes to the factory, the first thing that must be done is to clean it thoroughly and test it, as rubber varies greatly in composition. Until it is used it is stored in a cool, dark place, usually underground. When a load is brought to the manufacturing plant, it is steamed into a soft, plastic mass and thoroughly washed by being passed through heavy rollers while water is sprinkled on from above. Finally it comes out looking like a thin piece of sheet sponge. Vacuum driers take this spongy sheet and extract every particle of moisture.

Next it is put into mills which rub and crush it until it loses its elasticity and becomes soft and plastic like putty. In this form it is ready for the mixing room, where sulphur and other ingredients are added to it. Each product has a special requirement which must be taken into account in the preparation. Some must be hard, others soft; some must stand abrasion, others heat; some will come in contact with acid, others must stand continuous pounding, and still others a steady pressure. Each ingredient is weighed with painstaking care. Then the mixture is rolled between hot rollers, from which it emerges a sheet of prepared rubber about a quarter of an inch in thickness.

The rubber is then ready for the products factory. After the articles have been fashioned, they are subjected to the final step in the vulcanization process (curing by heat). The hardness of the article is determined by the amount of heat and the length of time it is applied.
SAMPLE. In what part of the globe do rubber-producing trees grow? (4)
1. Can the plant live after the latex has been removed? (1)
2. Where is latex found? (2)
3. What happens if the milky liquid is allowed to remain undisturbed for a time? (3)
4. Is latex the sap of the plant? (4)
5. What makes the doughy mass taken from the top of the latex become firm and elastic? (5)
6. Why is rubber tested when taken to the factory? (6)
7. How is water brought in contact with the crude rubber in order that it may be washed thoroughly? (7)
8. Where is crude rubber kept before it is taken to the manufacturing plant? (8)
9. What is done first when crude rubber is taken into the factory? (9)
10. What is the final step to which crude rubber is subjected before it is put into the mills? (10)
11. Where is sulphur added to the rubber? (11)
12. To what is the rubber compared after it has been rubbed and crushed in the mills? (12)
13. What appearance does the rubber have after being washed? (13)
14. What determines the hardness of rubber articles? (14)
15. What is done to the rubber after it has been made into various articles? (15)

Do not turn this page until told to do so.

Number right \( \times 2 = \) (Score, Test I A)
AUTUMN

Season of mists and mellow fruitfulness,
Close bosom-friend of the maturing sun;
Conspiring with him how to load and bless
With fruit the vines that round the thatch-eaves run;
To bend with apples the moss'd cottage-trees,
And fill all fruit with ripeness to the core;
To swell the gourd, and plum the hazel shells
With a sweet kernel; to set budding more
And still more, later flowers for the bees,
Until they think warm days will never cease;
For Summer has o'erbrimm'd their clammy cells.

Who hath not seen Thee oft mid thy store?
Sometimes whoever seeks abroad may find
Thee sitting careless on the granary floor,
Thy hair soft-lifted by the winnowing wind,
Or on a half-reaped furrow sound asleep,
Drowsed by the fume of poppies, while thy hook
Spar'ds the next swath and all its twined flowers;
And sometimes like a gleaner thou dost keep
Steady thy laden head across a brook;
Or by a cider-press, with patient look,
Thou watch'st the last oozings, hours by hours.

Where are the songs of Spring? Ay, where are they?
Think not of them, thou hast thy music too,
While barred clouds bloom the soft-dying day,
And touch the stubble-plains with rosy hue;
Then in a wailful choir the small gnats mourn
Among the river-shallows borne aloft
Or sinking as the light wind lives or dies;
And full-grown lambs loud bleat from hilly bourn;
Hedge-crickets sing, and now with treble soft
The rea-breast whistles from a garden croft
And gathering swallows twitter in the skies.

From "To Autumn," by John Keats

1. What are the attributes of this period of the year? (1)
2. How does autumn show that the harvest time is near? (2)
3. Does the poet think that everyone has seen the season of which he writes? (3)
4. How does the poet describe the union of the autumn with the sun? (4)
5. Is it difficult to find the character described? (5)
6. Have the bees stored up much honey? (6)
7. For what purpose do the late flowers grow? (7)
8. What sound do the gnats make? (8)
9. Does the poet consider the songs of spring worth remembering when autumn has come? (9)
10. Is the evening sky of this season of the year cloudless? (10)
11. Has this season any music of its own? (11)
12. How are the vagaries of temperature of the season described? (12)
13. What is the musical term that describes the robin's call? (13)
14. What familiar birds are used to suggest evening? (14)
15. How does the poet describe the changes in the force of the wind? (15)
Iowa Silent Reading: B

TEST 2. WORD MEANING

DIRECTIONS. Study the sample below. Each of the following exercises consists of a statement which is correctly completed by one of the numbered words or phrases. Write the number of the proper word or phrase in the parentheses, as shown in the sample.

SAMPLE. To toil is to — 1 read 2 play 3 work 4 fall 5 believe. (3)

PART A. SOCIAL SCIENCE

1. Tariff means — 1 figure 2 personal expense 3 tax 4 ransom 5 quotation. (1)

2. Naturalization means — 1 nationalism 2 nationalization 3 international 4 receiving the rights and privileges of a citizen 5 receiving immigrants. (2)

3. To inaugurate means to — 1 imprison 2 induct into office 3 fine 4 exempt 5 incite to riot. (3)

4. Revenue is the same as — 1 a retreat 2 an appeal 3 a revolt 4 a reunion 5 a collection of funds for public use. (4)

5. A democracy is a government of the — 1 few 2 people 3 many 4 rich 5 nobility. (5)

6. To veto is to — 1 denounce 2 enact 3 resign 4 refuse 5 accuse. (6)

7. To filibuster is the same as to — 1 vote 2 lobby 3 make a law 4 encourage legislation 5 delay legislation. (7)

8. A franchise is a — 1 grant of a constitutional right 2 candid opinion 3 political office 4 requirement for public office 5 bill for raising revenue. (8)

9. Legislation means — 1 passing laws 2 lawfulness 3 legality 4 diplomacy 5 law enforcement. (9)

10. Conservation means — 1 consumption of goods 2 careful sanitation 3 preservation of goods 4 deforestation 5 shipment of supplies. (10)

11. Ratification means — 1 appraisal 2 taxation 3 treason 4 majority 5 public sanction. (11)

12. To confiscate is to — 1 tear down 2 build up 3 seize by public authority 4 support 5 use for public building. (12)

13. Indemnity means — 1 insurance 2 pension 3 compensation for loss 4 indenture 5 indebtedness. (13)

14. Despotism means — 1 tyranny 2 despair 3 danger 4 benevolence 5 representative government. (14)

15. Sedition means — 1 passion 2 treason 3 confidence 4 certainty 5 secret. (15)

16. An emigrant is — 1 a barbarian 2 a stranger 3 a new recruit 4 one who leaves a country 5 one who enters a country. (16)

17. Sanitation refers to — 1 health 2 disease 3 Red Cross 4 disaster 5 hygiene. (17)

18. Jurisdiction means — 1 vindication 2 legality 3 administration of law 4 sphere of authority 5 judicial decision. (18)

19. Embassy means the same as — 1 ambassador 2 merchant marine 3 embargo 4 vice governor 5 vassal. (19)

20. A statute means — 1 statuary 2 a legislative act 3 a by-law 4 a legal procedure 5 the height of a man. (20)

Do not turn this page until told to do so.

Number right...... (Score, Test 2 A)
PART B. SCIENCE

1. **Preservation** means — 1 assumption 2 keeping from decay 3 rapid development 4 continued activity 5 phenomenon ............. ( ) 1

2. To **function** means to — 1 filter 2 condense 3 operate 4 be in the intended place 5 diffuse ............. ( ) 2

3. Energy means — 1 kinetic 2 endurance 3 potential 4 power to act 5 compulsion ............. ( ) 3

4. **Science** means — 1 systematized knowledge 2 theory 3 scientific 4 general law 5 a scientist ............. ( ) 4

5. **Saturated** means — 1 completely filled 2 satisfied 3 dried 4 expanded 5 developed ............. ( ) 5

6. **Evolution** is the process of — 1 alternating 2 deviating 3 forming 4 developing 5 drilling ............. ( ) 6

7. **Neutralize** means — 1 oppose 2 mix 3 destroy 4 counteract 5 adhere ............. ( ) 7

8. **Efficiency** means — 1 effort 2 friction 3 diffusion 4 power to act 5 effectual power ............. ( ) 8

9. **Decomposition** is a process of — 1 osmosis 2 decay 3 corrosion 4 crystallization 5 neutralization ............. ( ) 9

10. To **experiment** means to — 1 practice 2 distribute 3 expand 4 criticize 5 reproduce phenomena under control ............. ( ) 10

11. **Aqueous** means — 1 solid 2 metallic 3 liquid 4 acid 5 gaseous ............. ( ) 11

12. **Buoyancy** means — 1 lifelike 2 motionless 3 upward pressure 4 force of water 5 deflection ............. ( ) 12

13. **Inertia** means — 1 ineptitude 2 resistance to change 3 capability 4 inefficiency 5 intensity ............. ( ) 13

14. **Volatile** means — 1 easily evaporated 2 viscous 3 quickly frozen 4 opaque 5 flexible ............. ( ) 14

15. **Synthesis** is the same as — 1 analyzing 2 taking apart 3 summarizing 4 building up 5 experimenting ............. ( ) 15

**Do not work on the next part until told to do so.** Number right .......... (Score, Test B 2 B)

PART C. MATHEMATICS

1. To **transpose** means to — 1 examine 2 check 3 exchange in position 4 drill 5 reason ............. ( ) 1

2. Balance means — 1 breadth 2 equality between two values 3 a weight 4 opposite 5 steadfastness ............. ( ) 2

3. Solution means — 1 addition 2 grouping 3 securing the answer 4 definition 5 explanation ............. ( ) 3

4. **Equivalent** means — 1 interest 2 abstract 3 checking computations 4 combination 5 same in value ............. ( ) 4

5. **Vertical** means the same as — 1 a point 2 a vertex 3 a given length 4 perpendicular to the plane of the horizon 5 numerical values ............. ( ) 5

6. An **inventory** is — 1 a ratio 2 a detailed account 3 a factor 4 a result 5 an explanation ............. ( ) 6

7. Consequent means — 1 resulting 2 counting 3 checking 4 following 5 changing ............. ( ) 7

8. Corresponding means — 1 writing 2 reciprocal 3 correct 4 same in quantity or quality or position 5 precise ............. ( ) 8

9. **Equilateral** means — 1 equality 2 equal distances 3 equivalent 4 diagonal 5 equal sides ............. ( ) 9
Iowa Silent Reading: B

To **compute** is to — 1 compel 2 commence 3 copy 4 calculate 5 count

To **verify** means to — 1 prove 2 doubt 3 construct 4 study 5 work

**Magnitude** refers to — 1 multiplication 2 estimation 3 size

To **circumscribe** means to — 1 use a compass 2 draw around 3 draw through 4 complete 5 find a circumference

**Axiom** means a — 1 self-evident truth 2 proved law 3 whole number 4 straight line 5 faulty principle

---

**PART D. ENGLISH**

1. A **biography** is — 1 an anthology 2 a fable 3 a written life of a person 4 a tradition 5 a tract

2. A **myth** is — 1 a primitive imaginary tale 2 a mystery play 3 an epigram 4 a burlesque 5 a comedy

3. A **salutation** is — 1 a letter 2 a poem 3 an outline 4 a greeting 5 an expression

4. **Synonyms** are — 1 terse words 2 words similar in meaning 3 vulgarisms 4 vague words 5 words opposite in meaning

5. A **metaphor** is — 1 a refrain 2 a figure of speech 3 an allegory 4 a couplet 5 an epistle

6. **Tense** pertains to — 1 mode 2 prepositions 3 verbs 4 nouns 5 adverbs

7. **Fictitious** means — 1 imaginative 2 genuine 3 decadent 4 skeptical

8. **Melancholy** means — 1 mawkish 2 ludicrous 3 sentimental 4 gloomy 5 gruesome

9. **Characterization** means — 1 fascination 2 representation 3 dramatization 4 dialect 5 chivalry

10. Unity is obtained by using — 1 loose sentences 2 specific terms 3 dangling participles 4 related material 5 many modifiers

11. An **anecdote** is — 1 a parable 2 an altruism 3 an allegory 4 an allusion 5 an account of an incident

12. **Ambiguous** means — 1 unorganized 2 literary 3 clearly understood 4 eloquent 5 of doubtful meaning

13. **Coordinate** means — 1 emphatic 2 coherent 3 equal in rank 4 correlative 5 connected

14. **Impromptu** means about the same as — 1 offhand 2 specific 3 improving 4 indefinite 5 imperative

15. To be **coherent** is to be — 1 inconsistent 2 systematic 3 composed 4 logically clear 5 vague

16. An **elegy** is — 1 a diary 2 a poem of lamentation 3 an ode 4 an epitaph 5 an oration

17. A **sonnet** is a — 1 ditty 2 stanza 3 14-line poem 4 classic 5 rune

18. A **bard** is a — 1 novelist 2 mystic 3 nonconformist 4 poet 5 pagan chieftain

19. **Analogy** means — 1 term 2 hypothesis 3 fallacy 4 similarity 5 enigma

20. **Hackneyed** means — 1 archaic 2 unusual 3 illiterate 4 stilted 5 commonplace

---

Do not work on the next part until told to do so.

Number right........(Score, Test 2 C)

---

Do not work on the next part until told to do so.

Number right........(Score, Test 2 D)
TEST 3. PARAGRAPH ORGANIZATION

PART A. SELECTION OF CENTRAL IDEA

DIRECTIONS. This test is given to see how well you are able to recognize the central idea of a paragraph by selecting the best descriptive phrase that tells what the paragraph is about. After each paragraph you will find short groups of words that are numbered. In the parentheses at the right put the number of the group of words which most nearly suggests the central thought of the paragraph.

1. Before the match was invented, starting a fire was not an easy matter. The Indians often started fires by rubbing two sticks together. A much more common method among the early settlers was to strike steel and flint together, the sparks lighting a bit of "tinder." Oftentimes live coals were carried from one house to another. Since the invention of the friction match in 1827, starting a fire has become a simple process.
   1. invention of matches 2. kinds of fire 3. the match industry 4. methods of starting fires 5. how Indians started fires

2. Rubber is one of the important products of the world today. The annual supply is nearly 300,000 tons, two thirds of which is used in the United States, principally for automobile tires. Rubber is also used in making medical supplies, household articles, batteries, toys, and clothing; and recently a rubber bearing has been successfully used on parts moving in water.
   1. use of rubber for tires 2. rubber bearings 3. importance of rubber 4. annual supply of rubber 5. making medical supplies

3. The Mayas were a race of Indians inhabiting the peninsula of Yucatan. They were much more civilized than other tribes of American Indians. When they were first found by the white men, they gave evidence of possessing many skills and abilities which were similar to those displayed by the whites. They constructed houses of faced concrete, four and five stories high. The Mayas were expert potters and have left many beautiful products of their skill. Their history, religion, rites, and magic were recorded in their books in hieroglyphic characters.

4. All animals sleep, but many of them do so in ways so curious that they seem to be awake. Ducks sleep on open water, and to keep from drifting ashore paddle with one foot continually, thus traveling in a circle. Bats sleep head downward, hanging by their hind claws. Many animals of the cat species sleep with wide-open staring eyes. Elephants sleep standing up, their heads slowly swinging as if they were awake. Stories that some animals do not sleep are the result of these and other curious examples.
   1. why animals sleep 2. how animals sleep 3. how ducks and bats sleep 4. animal life 5. the sleep of elephants

5. One of the most pressing economic problems of today is the securing of an adequate food supply. In the more densely populated parts of Asia an unfavorable growing season has for centuries meant famine and death for thousands of persons. The fact that the population of the earth is increasing far more rapidly than the food supply should give us an increased interest in plants, the primary source of all foods. When we realize further that our resources of lumber, fuel, fibers, paper pulp, oils, resin, rubber, and numerous other products come from plants, our absolute dependence on plant life is apparent.
   1. pressing economic problems 2. famines in Asia 3. increasing population 4. decreasing food supply 5. importance of plant life
6. Endurance on the wing is much more remarkable than the speed with which birds fly. Many birds seem to be continually in the air. During migrations a large variety undertake long journeys, which sometimes reach halfway around the world.

1. flight of birds 2. migration of birds 3. speed of birds 4. endurance of birds 5. how birds fly long distances

7. Charles W. Eliot, formerly head of Harvard University, exercised an influence far beyond that of the usual college president. He was looked up to by hundreds of thousands of his fellow citizens as a guide, not merely in educational matters but in all of the great political, industrial, social, and moral questions. It is difficult to name another figure who so largely dominated our intellectual horizon.


8. The Red Cross is an international agency which was organized primarily to care for the sick, the wounded, and prisoners in times of war. Recently it has shown a tendency to regard the alleviation of human suffering, whatever its source, as falling under its jurisdiction. The fundamental idea for the movement came as the result of the publication of a booklet by Henri Dunant in 1862.

1. the Red Cross as an international agency 2. purposes of the Red Cross 3. the organization of the Red Cross 4. the founder of the Red Cross 5. the need of the Red Cross

9. When a number of bees gather in one place, they are called a swarm. The size of a bee swarm varies greatly. Two of the major factors influencing the size of the swarm are the strength of the hive from which it came and the time of the year. A weak swarm may not contain more than ten thousand bees, while a strong one may have as many as eighty thousand bees.

1. size of weak swarms 2. size of strong swarms 3. way to raise bees 4. bee culture 5. size of a bee swarm

Do not work on the next part until told to do so. Number right...........(Score, Test 3 A)

PART B. OUTLINING

DIRECTIONS. The following are exercises to test your ability to organize an outline giving the most important items of a paragraph. Read the following paragraphs carefully. At the right of the paragraphs are outlines partially filled in. Fill in the blank spaces in the outline from your reading of the paragraphs by placing, in the outline, the numbers corresponding to the proper brackets. Be sure to select the group of words in the different brackets which will result in a well-organized outline. Be sure not to include more items in the outline than have been provided for.

1. In the United States, which is the leading agricultural country in the world, several causes have combined to encourage this 1. industry. Of these factors, the more important are the 2. fertility of the soil, the variety of climate and other conditions of environment, the energy of the people, the encouragement lent by the government to scientific agriculture, and the unrivaled transportation system for marketing crops. Land has been very cheap. High wages in other industries have led to the invention of machinery by which one man can do the work of many. There is no other country in the world where machinery is used so extensively in agriculture.

Paragraph 1.

1. Factors encouraging American agriculture.

A. 1.  
B. 2.  
C. 3.  
D. 4.  
E. 5.  
F. 6.  
G. 7.  

[ 9 ] This part is continued on page 10.
2. The speed with which material may be printed has increased many times since the substitution of machine for hand operations, but none of the essential procedures — composition, make-up, and presswork — have been eliminated. When type was set by hand, it was placed in a small metal frame called a stick, which held about fifteen lines of ordinary type. When this was filled, the compositor placed the type in a long, narrow frame called a galley. After the type had been set, a rough copy was taken from the galley, which was known as a “proof.” The proof was corrected, then given to the compositor, who corrected the composition accordingly. These same steps are essential in setting type by machinery.

Paragraph 2.

I. Steps in typesetting.
   A. ( )
   B. ( )
   C. ( )
   D. ( )
   E. ( )

Paragraph 3.

I. How rice is made ready for market.
   A. ( )
   B. ( )
   C. ( )
   D. ( )
   E. ( )
   F. ( )
   G. ( )

Paragraph 4.

I. The use of white lead.
   A. Extent of use in U. S.
      1. ( )
   B. Specific uses.
      1. ( )
      2. ( )
   II. Lead oxides.
      A. Kinds.
         1. ( )
         2. ( )
      B. Uses of red lead.
         1. ( )
      C. Uses of litharge.
         1. ( )
         2. ( )
         3. ( )
         4. ( )
      D. How made.
         1. ( )

Do not turn this page until told to do so.

Number of points listed correctly ........... + 2 ......... (Score, Test 3 B)
TEST 4. SENTENCE MEANING

DIRECTIONS. Study the following samples. Read each question and answer it by drawing a line under the right answer. DO NOT GUESS.

SAMPLES.

Are all people dishonest? .............................................. Yes No

Are authors often quoted? ............................................. Yes No

---

1. Should the laws operate with equal effect on all people? .............................................. Yes No 1
2. Is harmony between nations encouraged by the League of Nations? Yes No 2
3. Is dependable evidence always available? Yes No 3
4. Is it wise to misapply talent? Yes No 4
5. Do nations always react favorably to plans for reduction of arms? Yes No 5
6. Does success usually depend on one's perseverance? Yes No 6
7. Are agility and endurance considered undesirable in an athlete? Yes No 7
8. Is an approximation a precise answer? Yes No 8
9. Are authorities sometimes quoted in editorials? Yes No 9
10. Are those who are most boastful ever the least important? Yes No 10
11. Does allegiance to one's country imply loyalty? Yes No 11
12. Are all festivities characterized by formality and ceremony? Yes No 12
13. Do most occupations involve some work that is not pleasant? Yes No 13
14. Do exact instruments facilitate accurate measurements? Yes No 14
15. Should very important work be done only by able men? Yes No 15
16. Is disagreement among the members of Parliament unusual? Yes No 16
17. Is it true that all future events are definitely predictable? Yes No 17
18. Do frequent changes in plans always result in failure? Yes No 18
19. Must exercise be violent to be considered adequate? Yes No 19
20. May disputes ever arise over an expedient alliance? Yes No 20
21. Is the presence of an obnoxious guest displeasing to the host? Yes No 21
22. Does antagonism to the law indicate that one is patriotic? Yes No 22
23. Will a precarious position be improved by a lack of care? Yes No 23
24. Are desirable laws often hard to enforce? Yes No 24
25. Is flattery always an expression of admiration? Yes No 25
26. Will a slight discrepancy necessarily remain obscured? Yes No 26
27. Are true statements usually inconsistent? Yes No 27
28. Do satisfactory solutions of problems ever follow controversies? Yes No 28
29. Does an untried thing frequently have value? Yes No 29
30. Are most people apprehensive before entering upon an unusual ordeal? Yes No 30
31. Is a reversal of a judicial decision impossible? Yes No 31
32. Is one's conduct usually influenced by one's moral convictions? Yes No 32
33. Is aggressive behavior unusual in a contest? Yes No 33
34. Are excessive activities characteristic of a temperate person? Yes No 34
35. Is it unethical to circulate slanderous rumor? Yes No 35
36. Is petty misbehavior conducive to the formation of a desirable reputation? Yes No 36
37. Is efficient service always insured by adequate remuneration? Yes No 37
38. Does fresh air inhibit the action of bacteria that cause tuberculosis? Yes No 38
39. Are identical objects necessarily similar in appearance? Yes No 39
40. Should a nation consider valuable natural resources as an asset? Yes No 40

Do not turn this page until told to do so.

Number right minus Number wrong . . . . (Score, Test 4) [ 11 ]
INDEX

Africa: climate, 125, 126; exports, 140; industries, 130; natural resources, 99, 144; population, 135; waterways, 150.

Chemistry: defined, 90; divisions, 63; industrial uses of, 66-69; in secondary schools, 70; in warfare, 69.

Cotton: by-products of, 480; exports, 489-491; growing of, 473; important districts in United States, 474; manufactures of, 482-489; planting of, 472; value, 492.

England: coal, 372; commerce, 859-861 (Fig. 121); dairying, 155; factory system, 483; iron industry, 355; wool manufacture, 499. See Great Britain.

Forests: American destruction of, 419; Great Lakes region, 426; political control, 422; preservation, 421; tropics, 452.

Germany: agriculture, 34-39; army, 40-41; aviation, 42-45; constitution and government, 29-30; forestry, 445; iron industry, 365; tariff, 366; wheat growing, 36; world war, 69.

Great Britain: relation with Australia, 185; relation with India, 162.

Machinery: agricultural, 556; automobile industry, 289-293; construction, 461; for manufacturing, 602; transportation, 600.

Mineral industries: cement, 605; foreign, 611; iron furnace, 609; location, 601-603; manufacturing process, 608; pottery and porcelain, 612.

Oregon: canning industry, 229; climate, 335; coal mining, 362; map (Fig. 53), facing 229; national forests, 431.

Peaches: 222-225, 229-230; California, 224; Chesapeake and Allegheny belt, 233; climate, effect of, 220; Europe, 225; Great Lakes, 222; Oregon, 229, 230; Ozark, 223; south temperate zone, 225.

Refrigeration: industrial uses of, 160; in homes, 216; on railways, 150.

Rubber: increase in consumption, 540-542; manufactures, 553; petroleum products in manufacture, 414; sources of, 547; synthetic, 552; world's production, 40, 411; (Fig. 262) 411.

Wood: destruction in United States, 201; gas from, 215; hard and soft, 220; uses of, 419. See also Forests.

Study the following samples:

Where (on what page as shown in the index above) will you find information on coal mining in Oregon? .........................( 362 )

Can you find information regarding agriculture in Germany? .................( Yes )

Answer the remaining information regarding agriculture in Germany? .................( Yes )
4. On what page can a definition of chemistry be found? (4)

5. What word would you look for to find additional information about wood? (5)

6. On what page will be found information telling about the by-products of cotton? (6)

7. Under what topic can you find additional references to England? (7)

8. Does the index tell you on what page you can find something about the cost of refrigerators? (8)

9. On what page can you find a figure about the world’s production of rubber? (9)

10. On what page is the subject of the effect of climate on peaches discussed? (10)

Do not work on the next part until told to do so.

Number right: \( \times 2 \) (Score, Test 5 A)

PART B. SELECTION OF KEY WORDS

DIRECTIONS. This is a test of your ability to locate key words in using the index. Study the following sample. Read the question and note that below it are given seven words, or groups of words. These words are numbered to save time in writing. In the parentheses at the right put the numbers of the three words which, if looked up by means of an index, would be most likely to give you the answer to the question.

SAMPLE.
What is the value of our annual corn crop?
1 hides 2 iron 3 crops 4 wheat 5 corn 6 hogs 7 corn meal (3, 5, 7)

1. What is the value of our annual supply of mineral products?
1 iron 2 lumber 3 mineral products 4 value 5 coal 6 annual supply 7 grain (1)

2. What are the main water routes of the United States?
1 irrigation 2 rivers 3 lakes 4 rainfall 5 climate 6 canals 7 crops (2)

3. Was John Hay a joint author of the treaty which defined the use of the Panama Canal?
1 John Hay 2 Secretary 3 joint author 4 Panama Canal 5 canals 6 author 7 Hay-Pauncefote Treaty (3)

4. Was Pershing commander of the allied armies during the World War?
1 enemies 2 general 3 Pershing 4 World War 5 war 6 allied armies 7 commander (4)

5. What is the annual cost of damage done to crops by insects?
1 insects 2 boll weevil 3 wool 4 peaches 5 crops 6 lumber 7 meat (5)

6. Is phosphorus, which is a non-metallic element, a valuable ingredient in tool steel?
1 phosphorus 2 valuable 3 ingredient 4 steel 5 tools 6 elements 7 content (6)

7. Was Andrew Mellon the man who formulated the Federal Reserve System and a Federal Income Tax Law?
1 lawmaking 2 Federal Reserve System 3 Treasurer 4 formulate 5 Andrew Mellon 6 Income Tax Law 7 systems (7)

[ 13 ] This part is continued on page 14.
8. Was Lloyd George the man who formulated in England the budget system and the tax on unearned increments?
   1 Lloyd George  2 system  3 budgetary methods
   4 England's unearned increment tax  5 England  6 tax
   7 England's budget system ........................................... (  ) 8

9. Why is the name Lenin usually associated with the industrial revolution of Russia?
   1 Lenin  2 association  3 Russia  4 industrial movement in Russia
   5 history  6 reorganization  7 revolutions ......................... (  ) 9

10. What method of learning did Socrates contribute to education?
    1 philosopher  2 Socratic method  3 Greece  4 education
    5 Socrates  6 methods  7 schools .................................... (  ) 10

11. Has the Republican party generally followed the policy of high protective tariff?
    1 revenue  2 government  3 Republican  4 protection
    5 movements  6 tariff  7 party policies .......................... (  ) 11

12. Was Poe the author of "The Gold Bug"?
    1 Poe  2 "Gold Bug"  3 literature  4 author
    5 stories  6 American authors  7 writers ....................... (  ) 12

13. When was the first transcontinental railroad constructed?
    1 Union Pacific  2 Santa Fe  3 railroads  4 steam  5 power
    6 engine  7 car ................................................... (  ) 13

14. What was the character of the literature during Queen Victoria's reign?
    1 character  2 Queen Victoria's reign  3 Victorian period
    4 literature  5 English literature  6 history  7 writers .... (  ) 14

15. Is the name of Trotsky usually associated with the industrial revolution of Germany?
    1 name  2 Trotsky  3 associated  4 revolution
    5 organization  6 periods of industrial reorganization
    7 industrial movements of Germany ................................ (  ) 15

16. Is malaria carried from one person to another by mosquitoes?
    1 sickness  2 disease  3 contagious fevers  4 malaria
    5 carried  6 illness  7 mosquitoes ............................... (  ) 16

17. Did the parliamentary system of government originate with Great Britain?
    1 origin  2 parliamentary system  3 early forms  4 constitutions
    5 systems  6 Prime Minister  7 originate ........................ (  ) 17

18. In what year did the Spanish-American War begin?
    1 Spain  2 soldiers  3 fight  4 Spanish-American War
    5 United States  6 navy  7 army .................................. (  ) 18

19. Was General Grant in charge of the Union forces when General Lee surrendered at Appomattox?
    1 Union  2 General Grant  3 surrender  4 generals
    5 Appomattox  6 confederates  7 Civil War ..................... (  ) 19

20. Is agriculture an important industry in Germany?
    1 agriculture  2 industry  3 Germany  4 farm products
    5 commerce  6 important  7 value ................................ (  ) 20

Do not turn this page until told to do so.

Number right ........ (Score, Test & B)
TEST 6. RATE OF SILENT READING

Directions. This is a test to see how well and how rapidly you can read silently. When the examiner says “Go,” begin to read the article below. Read as rapidly as possible, but be certain that you understand what you have read. From time to time you will find questions or exercises in the article which you will be able to answer if you have understood what you have read. Sometimes they will be simple questions like this one: “Does it say you are to read very slowly? Yes No.” Since you are told to read rapidly, not slowly, the correct answer, “No,” is underlined. Sometimes there will be exercises like this: “The paragraph states that you are to read: a book an article.” Underline the correct answer to this exercise now. In a similar way you are to answer all of the exercises in the article by underlining the correct word. Read the article straight through from the beginning, answering the exercises as you go.

One thing more, at the end of one minute the examiner will say “Mark.” When the examiner says “Mark,” draw a line around the word you are reading at the time and keep right on reading. At the end of two minutes, when the examiner says “Stop, mark,” stop reading and mark the last word you read.

The Influence of the Press

The policy of the government in a democracy is decided in the long run by public opinion. The government can and sometimes should take a position that is unpopular, but it must justify its course in order to hold the support of the majority of the people. If the party in power fails to do this, it will eventually be voted out of office and a party more to the liking of the majority will be set up in its place. Does the paragraph state that the people can vote a political party out of power? Yes No. The people are the masters, and the greatest problem that confronts the United States is that of making the people fit to exercise their sovereignty.

One of the most important instruments in the formation and expression of public opinion is the printing press. The freedom of the press from interference by the government has been guaranteed in the provisions of the first ten Amendments. Is the freedom of the press guaranteed in the Twelfth Amendment? Yes No. It must be admitted, however, that the people, during both the Civil War and the World War, consented to governmental interference with the press in the form of an extensive censorship of the news. At such times the pressure of military necessity creates a situation which would not be tolerated in times of peace. The paragraph states that in time of war the government may interfere with the press itself recognizes that when the very existence of the nation is at stake, it must refrain from publishing information that will aid the enemy or weaken the people’s morale.

Undoubtedly the most influential division of the press is the newspaper. The large daily newspaper has correspondents in every part of the world, who telegraph daily accounts of events in their respective territories. Underline the word representing the division of the press that according to this paragraph exerts the most influence on public opinion: magazines newspapers telegrams. Local reporters are also assigned to keep in touch with the many activities of the city, and to write accounts of events that...
are of interest to the local readers of the paper. In addition to the daily news, many newspapers, especially in their elaborate Sunday editions, conduct departments intended to promote general culture by reviewing new books, scientific discoveries, plays at the local theaters, musical attractions, art exhibits, and many other similar features. Underline the word that according to this paragraph tells who is most interested in the news items written by city reporters: local readers editors rural subscribers.

The public is entitled to an account of the events of the world, uncolored by editorial opinion. Too often the news reports are tinged with propaganda either by the insertion of editorial comment in the text of the story or by misleading headlines designed to guide the judgment of the reader. According to this paragraph headlines designed to influence the interpretation of the news are usually small truthful misleading. Newspapers with the best of intentions find it impossible always to keep the reporter's natural bias out of his stories.

The editorial columns are the legitimate place for the expression of opinion about the news of the day. To express opinion, to interpret the news by intelligent comment, is the business of the editor. The news columns are read to discover the facts and consequently should be unbiased. The editorial interpretation of the news, according to this article, should be given in the news columns editorial columns headlines. The editorial columns should be read in much the same way that one might discuss the news with an intelligent neighbor, to test one's opinions and perhaps to modify them, if strong arguments for contrary views are presented. The editorial page should be approached in a critical frame of mind, in which the reader expects to find, not bare facts, but the interpretation of these facts by an individual who is often biased in his judgment. Underline the words which express what the reader after reading this article should expect to find in the editorial page of a newspaper: bare facts personal interpretations feature articles.

The business interests of large advertisers often exert a form of control over the policy of the newspaper. The largest part of the cost of publishing a newspaper is paid by business men and corporations using its advertising columns to display their wares. The people who subscribe for the paper pay a very small percentage of the total cost. This paragraph discusses newspaper costs editorials propaganda. It is not surprising, then, that some newspapers treat large business interests with more than benevolent neutrality. It is, of course, against the public interest to have the organs of public opinion controlled by business interests; for business corporations, like individuals, are likely to take a biased view of questions which might concern their profits. This paragraph leads to the conclusion that the control of the newspapers by big business interests is unfavorable to public welfare personal profits publicity.

\[ a. \text{ Number of last line read} \ldots \ldots \]
\[ b. \text{ Number of wrong answers } \times 3 \ldots \ldots \]
\[ a-b \ldots \ldots (Score, \text{ Test 6}) \]

[ 16 ]
Write your name here........................................................................................................ First name Last name

School................................................................................................................ Grade Date.................................................................

How old are you?.................................................................................. When is your birthday?

This is to be a reading contest. You will read paragraphs like this one, and answer questions like those you see below. Answer every question you can. If you come to a question you can't answer skip it and go on. Go back to it later. If you finish before you are told to stop, go back and make sure you have made no mistakes. When possible the answers to the questions must be found in the paragraph. You may read the paragraph as many times as you need to. You will have enough time but don't waste it. Play fair. Don't look at anyone else's paper. You will be told your score later.

I. Does it say you are to do your best?...............................................................

II. Does it say you may read the paragraph as often as you need to?............................... 

III. Are you to look at anyone else’s paper?......................................................

IV. When possible, where must you find the answers?..............................................

As soon as you finish one page do the next. You are to start with the first page. Open paper! Begin!

To the examiner: Distribute test booklets. Have blanks filled. Read the above paragraph aloud while pupils read silently. Read the first question aloud. Have it answered orally and then in writing by pupils. Treat the other three questions similarly. Start pupils. Stop pupils thirty minutes after saying Begin! Give no further help.

No. of questions correct........................................................................ T score.................

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New York City
Copyright 1922 by Teachers College
Read this and then write the answers. Read it again if you need to.

On Monday Dick saw a red fox, a gray squirrel and a black snake in the woods. The next day he saw a brown rabbit and five brown mice in the field. He killed the fox and all the mice but let the others live.

1. What was the name of the boy who saw the mice? ..........................................

2. On what day did he see the mice? .................................................................

3. What color was the fox? .................................................................................

Read this and then write the answers. Read it again if you need to.

Fred lives in the country. He likes to hunt and fish, and has a gun that cost sixteen dollars. His sister Grace keeps hens and ducks, and sells the eggs. She is learning to play the piano, and goes to Miss Thomas for a lesson every Saturday. She likes music but Fred doesn’t.

4. Write the name of Fred’s sister ........................................................................

5. What does Grace do with the eggs which her hens lay? .................................

6. How many lessons a week does Miss Thomas give Grace? ...........................

7. Does Fred dislike fishing? ...............................................................................

Do the next page.
Read this and then write the answers. Read it again if you need to.

Henry and Sam are eight years old. Edward is nine. Arthur is twelve and Richard is eleven. Henry and Edward play together and like each other very much. They will not play with Sam unless they have to; for neither of them likes him at all. He feels the same way toward them. They both would be very glad to play with Arthur or Richard, but they don't often have the chance; for these boys play with boys of their own age whenever they can.

8. Which boy is the oldest of the five?

9. Which two boys are the same age?

10. Of the five boys which two are oldest?

Read this and then write the answers. Read it again if you need to.

In the spring men begin to work the soil. Those who have small gardens break up the ground with such tools as spades and forks. Those who live on farms turn the soil over with plows drawn by horses. In these ways the soil is loosened. After the planting is done, the weeds must be killed and the soil must be loosened. In places where little rain falls, other ways of watering the plants must be found.

11. In what season of the year is plowing done?

12. Write the names of two tools which are used to loosen the soil in a garden.

13. What is the first thing the farmer does to the soil to make it fit to grow plants?

Do the next page.
Both before and after Christmas, Bob Adams worked harder than he did in the spring, summer, or fall. Only very rarely did he reach home before eleven o’clock; and on every morning except Sunday he was up at six, dressed and done with breakfast by quarter of seven, left the house at ten minutes of seven and reached Mr. Clark’s store at ten minutes of eight. In spite of the long hours and hard work, he was happy because his pay had been raised twice.

14. What was the cause of Bob’s pleasant feelings?

15. What other person besides Bob is mentioned in the paragraph?

16. How often did Bob reach home before eleven o’clock?

Nell’s mother went to the store on Water Street to buy ten pounds of sugar, a dozen eggs and a bag of salt. She paid a dollar in all. Nell and Joe went with her. On the way home on Pine Street, they saw a fire-engine with three horses.

17. Who paid for the sugar?

18. Where did Joe go?

19. Whose mother went shopping?

Do the next page.
There was once a merchant who was very, very rich. He had six children, three boys and three girls. His daughters were all beautiful, but the youngest one was the most beautiful of all. From the time she was a small child she had been spoken of as “Beauty.” As she grew older this caused a great deal of jealousy on the part of her sisters. But the young girl was not only more beautiful than they were; she was also kinder and more lovable.

20. Were Beauty’s sisters both beautiful?

21. What increased as Beauty’s age increased?

22. Does the story say that there was a great deal of jealousy on the part of Beauty?

According to the Kansas City Star, the wheat farmers of Kansas are too prosperous to trouble themselves about careful harvesting. They do not cut the fields clean. A gleaner 80 years old, after the wheat harvest in Pawnee County last year, went over the wheat-fields with a wagon, a rake, a brush, and a shovel and swept up the wheat left on the ground by the threshers. He gathered nine hundred bushels in forty days, and sold them at a dollar a bushel.

23. Might a farmer be prosperous and still have wheat swept up after the threshers?

24. Is this story about the farmers of Arkansas?

25. Might a farmer be prosperous and still waste a hundred bushels of wheat?

Do the next page.
For nearly thirty years "Lewis Carroll" was a lecturer on mathematics at Oxford. He studied divinity and occasionally preached, but his shy and retiring nature, together with a tendency to stammer, kept him from the regular ministry. He gave many lectures to audiences made up mainly of children. These lectures were of various sorts, but consisted principally of narratives from his books illustrated by lantern pictures. He invented a number of mathematical games.

26. Write the word "book" as it would sound when spoken by a person who stammers.

27. What study is mentioned in the paragraph which is a preparation for the regular ministry?

28. Write one word which could have been used in the last line of the paragraph instead of "a number of."

*Do the next page.*
Read this and then write the answers. Read it again if you need to.

There are two methods by which one might make himself acquainted with anything made up of related parts; as, for example, a watch. He might take the watch apart, piece by piece, and while doing so study the details of its structure and the relation of its parts one to another. An operation like this, which begins with the whole and descends to the parts which compose the whole, is called analysis. The word means a taking apart or separating. Or he might begin with the parts, and, after some experiment and study, get an excellent knowledge of the watch by putting its parts properly together. An operation of this kind is called synthesis.

29. Name in order the method which (a) is easier, (b) requires more originality.

30. Experimentation is more essential with which process?

31. Copy the words which tell what a mechanism is.

Do the next page.
COLERIDGE

I see thee pine like her in golden story
Who, in her prison, woke and saw, one day,
The gates thrown open—saw the sunbeams play
With only a web 'tween her and summer's glory;
Who, when the web—so frail, so transitory,
It broke before her breath—had fallen away,
Saw other webs and others rise for aye,
Which kept her imprisoned till her hair was hoary.
Those songs half-sung that yet were all divine—
That woke Romance, the queen, to reign afresh—
Had been but preludes from that lyre of thine,
Could thy rare spirit's wings have pierced the mesh
Spun by the wizard who compels the flesh,
But lets the poet see how heav'n can shine.

32. What appeared after a similar thing disappeared?
33. What word not in the last three lines, although in the last six lines, indicates a failure to attain perfect poetic truth?
34. State in ordinary English just why the songs were half-sung.
35. Whose songs were half-sung?
Questionnaire

Name ____________________________

Last name    First name    Middle Initial

Grade or classification in school: (Draw a circle around one)

High School: Freshman    Sophomore    Junior    Senior

Age: ______ Years and ________ months

Sex: ______ boy ______ girl (Check the correct one)

Estimated average time spent in study per day in school. ______

Estimated average time per day spent in study outside

of school. ________________________________

Estimated time spent in work per day at home not including

extra-curricular activities and study. ________________________________

Occupation of father. ________________________________

Amount of education of father. (Check the correct one)

Elementary graduate ______ High School graduate ______ College

graduate ______

Average income of father. (Draw a circle around one)

$500-1000  $1000-1500  $1500-2000  $2000-2500  $2500-3000

Do you live on a farm or in town? ________________________________

Check the extra-curricular activities which you participate in.

Athletics ______ Band ______

Dramatics ______ Literary clubs ______

Agricultural club ______ Honor society ______

Student body officer ______ Glee club ______

Class officer ______ Oratorical contest ______

Publications ______ List any others below:

Managerial work ______

Estimate the average time used for extra-curricular activities

per day. ________________________________
APPENDIX "C"

RAW DATA

AMERICAN SENIORS SCORES

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