

A STUDY IN THE USE OF THE RESULTS OF THE
CALIFORNIA ACHIEVEMENT TESTS

by

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INTRODUCTION

The purpose in making this study was to determine what information could be obtained from the California Achievement Tests (form AA) which would be useful to a high school staff in their work. Ohlsen (4, p. 51) states, "It is the school's responsibility to ascertain what is happening to children as a result of the experiences which they are having and have had."

The giving of low or unsatisfactory marks accomplishes nothing of positive value, unless the teacher diagnoses learning difficulties and then stimulates the pupils to successful achievement.

The California Achievement Tests profess to test the basic skills of reading, verbal and written expression, and mathematical thinking. Regardless of one's philosophy of education it is imperative that these tool subjects be mastered. There is only one way to aid the pupil to progress normally - find out what skills he lacks and help him to acquire them.

No comparisons with norms can ever be a substitute for the diagnosis of learning difficulties. Another writer (2, p. 2) states:

It is becoming generally known that the variation in skill and ability of pupils in a given high school grade ranges three or four years below and above the "norm" for the grade in which they are in attendance.

Many teachers erroneously assume that because their classes are up to some standard norm, there is no need for educational

diagnosis. However the norm merely reveals what the facts are: it does not indicate when results are satisfactory. The norm is a point of departure and not a final measurement.

Tiegs (6, p. 3) states:

Educational diagnosis relates to the techniques by which one discovers and evaluates both strengths and weaknesses of the individual as a basis for more effective guidance. Diagnosis is a logical process based on a consideration of all the available data concerning a particular individual or group of individuals. The analysis of these data and their interpretation in the light of knowledge gained from past experience enables the diagnostician to suggest necessary developmental or remedial measures.... In educational diagnosis, we are concerned with all factors which condition or interfere with normal learning.

Jones (3, p. 144) states:

When properly understood and intelligently used, achievement tests and scales are powerful factors in improvement because they enable us to diagnose difficulties. Often a careful analysis of such tests not only reveals general weakness or strength but also enables the teachers to find exactly where the weakness is.

In this study an endeavor has been made to show how the results of the California Achievement Tests can be applied to the classroom situation by:

1. Showing the standing of the school and its separate classes in comparison to the national norms.
2. Combining the diagnostic analysis for all pupils so that a class diagnostic analysis will result, to be handled as a group problems.
3. Finding the subjects represented by the battery that appear most in need of improvement.
4. Locating the areas within a subject where improvement is needed most.

5. Suggesting how the results may be used for the individual pupil; in choosing elective courses and in improving his learning in required work.

SELECTION OF ACHIEVEMENT TEST

Bingham (1, p. 89) explains:

Measurements of past accomplishments both in and out of school, when judged in relation to the length and character of the training or experience which has preceded them, provide the surest ground for estimating the possibility of future progress. Hence the importance of using the most reliable achievement test to be had, and of maintaining over a period of years a cumulative record of the scores.

Tests Available

The following are the descriptions of three achievement tests other than the one used in this study. Many others could be described but these are excellent examples of the best available in the field.

1. Metropolitan Achievement Tests: Useful in determining the background of high-school entrants. It is difficult to use in some school programs because of its length. The following fields are covered: reading, vocabulary, arithmetic fundamentals, English, literature, history and civics, geography, and spelling.

Alternate forms and grades covered: 5 forms. Grades 7-8.

Time: about four hours. The authors recommend that the tests be given in at least four sittings.

Reliability: .92 for grade 7, .95 for grade 9.

Validity: to be locally determined.

Norms: raw scores may be translated into grade and age equivalents.

Authors: R. D. Allen and others.

Publishers: World Book Company, Yonkers-on-Hudson, New York.

Cost: Complete battery \$2.90 per 25.

2. Stanford Achievement Test: The limited range of each battery permits the inclusion of a large proportion of material at grade and results in great accuracy of measurement. The fields of reading, language usage, arithmetic, literature, social science, elementary science, and spelling are surveyed. Alternate forms and grades covered: 5 forms. Grades 7-9.

Time: The working time is about 150 minutes.

Reliability: Reliability coefficients for single grade levels for the complete battery range from .968 to .974.

Validity: Validity is locally determined.

Norms: Norms based on modal age groups from which accelerated or retarded pupils have been eliminated, also there are the traditional norms based on the total population tests.

Authors: Truman Kelley, Giles Ruch, and Lewis Terman.

Distributed by: The Psychological Corporation, 522 Fifth Avenue, New York City.

Cost: Complete battery \$2.40 per 25.

3. Iowa Every-Pupil Tests of Basic Skill: This scale attempts to measure basic skills necessary for success in junior high school rather than achievement in a given subject. This battery measures silent reading comprehension, work study skills, language skills, and basic arithmetic skills.

Alternate forms and grades covered: four forms. Grades 5-9.

Time: 325 minutes for entire battery.

Reliability: .96.

Validity: Locally determined.

Norms: Percentile norms, age at grade norms, grade norms, and chronological norms.

Author: H. F. Spitzer and others.

Publisher: Extension Division, University of Iowa, Iowa City, Iowa.

Cost: \$1.50 per 25 in any one test of advanced battery, complete battery \$6.00 per 25.

Caution should be exercised in the selection and use of any achievement test. This is aptly brought out by Jones (3, p. 143) who states:

The chief difficulties encountered in the use of such tests and scales are probably incident to their newness and incompleteness. First, they do not measure all of the desirable outcomes in any subject. For the most part they are much more effective in measuring the formal side of education than any other. No effective standardized tests have as yet been devised for testing judgment, appreciation, power to organize, initiative, leadership, and character....When pupils are given standardized tests and their

achievement scores in these are taken as a measure of the success of their work and also of the success of the teacher, the emphasis is placed upon the particular element that is tested; when, as is so often the case, this is the formal side, there is great danger that teachers will also place the main emphasis upon the formal side. When this is done, the educative process is greatly weakened and impoverished. Standardized tests are often misused and thus may constitute a real danger.

Care should also be used in making rash generalizations from test results. Lennon (5, p. 127) explains:

Analyses of the correlations between mean achievement test scores (Standford Achievement Test) of a community for a given grade, and mean scores for other grade levels, indicate that there are marked variations in the relative standing of a community as measured at various levels. Therefore, generalizations from test results in any given grade as to performance in other grades, final status, or average status, are to be made with caution.

Test Selected

California Achievement Test (form AA): This test is a revision of the Progressive Achievement Test. It is a group diagnostic test battery which includes reading vocabulary, reading comprehension, arithmetic reasoning, arithmetic fundamentals, mechanics of English and grammar, and spelling.

Alternate forms and grades covered: 3 forms, AA, BB, and CC, grades 9-14.

Time: Approximately 150 minutes. Ordinarily given in two or three periods with rest periods intervening.

Reliability: The reliability coefficients for each of the tests is as follows:

Reading Vocabulary .93

Reading Comprehension .90

Total Reading .92

Arithmetic Reasoning .91

Arithmetic Fundamentals .93

Total Arithmetic .93

Mechanics of English and Grammar .89

Spelling .84

Total Language .92

Total Test .98

Validity: To be locally determined.

Norms: The age-grade norm and the percentile norms are used.

Authors: Ernest W. Tiegs and Willis W. Clark.

Publishers: California Test Bureau, 5916 Hollywood Blvd., Los Angeles 28, California.

Cost: \$3.00 per package of 25 tests.

The California Achievement Test has been evaluated by Witty (7, p. 30) as follows:

These tests are designed to serve as a basis for remedial work and constructive educational guidance.

Although the tests are designed for grade 9 to the adult level, they seem to the reviewer to include material most appropriate for testing and guiding in grades 9 and 10. The test is also of value in disclosing the range of abilities of high school pupils and shows clearly certain strengths and weaknesses in fundamental skills. Reliability coefficients are adequate....Tests for grade 9 to the adult level are of great practical value....Test results, when supplemented by other data, offer the teacher and the clinician material of unquestionable worth.

SOURCE OF DATA

The California Achievement test was administered on October 24, 1951 at school X. This included 137 pupils, representing the entire student body of school X at that time. The tests were given and roughly scored by the regular classroom teachers. The tests were then turned over to the author who did the complete scoring and tabulation of the results.

School X represents a common Kansas four year high school. Accredited since 1920, it maintains a staff of ten teachers. It is rated as a class "A" school by the Kansas State Department of Public Instruction. The class schedule of school X may be noted in the Appendix.

FINDINGS

Complete School and Total Battery

Table 1. California Achievement Test Grade Placement Norms for school X on all forms and six sub-tests.

	: :All :forms : :	: :Reading :vocab- : ulary :	: :Reading :compre- :hension :	: :Mathe- :matics :reason- : ing :	: :Mathe- :matics :funda- :mentals :	: :Mechanic :of Eng- :lish and :grammar :	: :Spell- : ing :
Fresh- man	9.8	8.9	9.5	9.5	10.8	10.4	8.6
Sopho- more	11.8	11.4	11.0	12.0	12.0	11.2	10.7
Junior	11.6	11.0	11.5	12.3	12.6	11.0	11.2
Senior	11.8	11.5	11.8	11.6	12.6	11.4	11.2

Table 2. California Achievement Test Percentile Norms for School X on all forms and six sub-tests.

	: :All :forms : :	: :Reading :vocab- :ulary :	: :Reading :compre- :hension :	: :Mathe- :matics :reason- :ing :	: :Mathe- :matics :funda- :mentals :	: :Mechanic :of Eng- :lish and :grammar :	: :Spell- :ing :
Fresh- man	70	50	60	60	75	75	40
Sopho- more	75	75	70	75	75	70	60
Junior	60	50	50	75	75	50	60
Senior	50	40	50	50	60	40	40

In the foregoing tables are given a summary of the norms achieved by the classes of school X. These norms were computed from the tables provided by the authors of the California Achievement Tests.

The tests having been given in the second month of the school term would give the freshman a grade standing of nine and two-tenths years. On the examination they have attained a grade placement of nine and eight tenths years for all forms (Table 1). Therefore this class is six tenths of a year above the national average. The sophomores in like fashion have exceeded their national norm by one and six-tenths years. The juniors surpass their national norm by only four tenths of a year. Slipping

still further the Seniors were four tenths of a year below their national norm.

The foregoing figures appear to indicate that the students of school X tend to be slowing down as they approach graduation. Several factors may have entered into the picture here, but limited time and space prevents further investigation. It is possible that the upper grades have less ability. There is a chance that there was a lack of motivation on the part of the seniors. There may also have been some distraction for this class that could have caused a poor showing. Even so, all classes are either on or above the 50th percentile for their grades.

Separate Classes and Total Battery

Figure 1 (Appendix) indicates the freshman class to be higher than the national average for the top half of the class and lower than the national average for the bottom half of the class. Yet the highest score attained in the class did not surpass the 95 percentile of the nation. Nor did the lowest score fall below the 10 percentile point for the nation.

Figure 2 (Appendix) shows the sophomore class as a whole to follow the national norms rather closely. However the class is high up on the scale, with the lowest score falling above the 20 percentile point for the nation. By the same token, the high score of the class is on a par with the high scores of the nation. Approximately 75 per cent of this class has scores that exceeded the median scores of the nation.

Figure 3 (Appendix) places the junior class in close alliance with the national scores. The high score of the class has reached the top of the scale for juniors of the nation, while the low score of the class has managed to stay above the 10 percentile point.

Figure 4 (Appendix) locates the senior class in a cluster around the 50 percentile point of the nation. This class has neither extremely high scores nor excessively low scores. The scores at the lower end do, however, fall under the low scores for the nation. Either the senior class has less ability or are using ability less effectively.

Separate Classes and Sub-tests

It can be noted from Tables 1 and 2 that the freshman class has fallen a little below the national average in reading vocabulary. Though they are still on the 50 percentile point they are three months behind in grade placement. This class has attained its lowest scores on reading vocabulary in the field of science (Appendix). The most random errors were in the general vocabulary. These random errors may have pulled the class grade placement down, but it is still evident that they are slightly behind in science.

The freshman class is somewhat lower than the national norm in spelling (Tables 1 & 2). In spelling they are at the 40 percentile point and six months behind on the grade placement

scale. From Table 3 (Appendix) it can be seen that 63 per cent of the students are below their expected grade placement score of 13.

The sophomore class is above their class grade placement and percentile points for the entire group of sub-tests (Table 1 & 2).

The juniors are on or above the 50th percentile for all sub-tests. However, their grade placement is low by 2 tenths in reading vocabulary and mechanics of English and grammar. The juniors lowest scores on reading vocabulary are found in the general vocabulary section, Table 3 (Appendix).

In referring to Table 9, (Appendix) the juniors are found to be extremely low in punctuation. Their weakness in punctuation can not be tied down to any specific type. They show decided weakness in the use of an apostrophe and the like, but this was covered up by considerable over-punctuation. Their errors were also very pronounced in sentence structure, kinds of sentences, and the vocabulary of grammar. This class would do well to review these three phases of English and grammar, as well as punctuation.

In Tables 1 and 2 the seniors are found to be low in all phases of the sub-tests, except mathematics fundamentals. Tracing their responses in Tables 7, 8, and 9 they have no extreme variations. Every question on the test was missed by some seniors but none by many. The only areas that could be traced to be weak spots were sentence structure,

kinds of sentences, vocabulary of grammar, and spelling. Here they show decided signs of weakness.

Item Analyses and School X.

The author has taken the total test, excluding spelling, and gone through each item to find where school X is below par. The following summary lists the learning difficulties found to be quite prevalent. (Tables 7 & 8, Appendix).

With the exception of the sophomore class all classes are low in their reading vocabulary. With all students thrown together, they appear to be about average. However, their general vocabulary is somewhat lower than average.

In reading comprehension school X has a lack of understanding of reference skills. Their vocabulary in this field is about average. They are not skilled in the use of reference books or encyclopedias. Their most outstanding weakness was in outlining of reports.

When confronted with mathematical reasoning, school X portrays little knowledge of Roman numerals. The school as a whole has made a very poor showing in the understanding of exponents and roots. An equally poor showing was revealed in the use of abstract numbers. A most significant weakness of school X in Mathematical reasoning was displayed in its large percentage of errors in dealing with insurance and discounts.

In the use of mathematics fundamentals school X made a good showing. However they were unable to cope with abstract numbers in addition, subtraction, multiplication, or division. This may be explained if only a few of the students have taken algebra. They also had minor trouble with denominate numbers in multiplication and fractions in the remainders in division.

Punctuation, sentence structure, and types of sentences held the school from making a good showing in English and grammar. There punctuation troubles were centered around the use of the apostrophe and quotations within quotations. In sentence structure the pupils have difficulty determining the differences between clauses and phrases. All four kinds of sentences have proven confusing to the students of school X.

The only other outstanding response on the examination, not already covered, was the use of conjunctions. Only 17.5 per cent of school X gave the correct response to question 69 of the English and grammar test. It appears that this is a faulty test question.

Diagnosis of Individual Pupils

The writer has presented some of the primary diagnostic values of the California Test. Heretofore he has been concerned mainly with group diagnoses. It would be a grave mistake to neglect individual diagnosis in a study of this kind. To illustrate how this test may be used to single out individual learning

difficulties, the author has selected four pupils from school X for analysis. These students were selected at random from the entire student body.

Student A is a senior, a girl of seventeen. She ranked in the 85th percentile for the complete battery. This young lady's first problem is in mathematics, dealing with equations. She was unable to handle the simplest of equations. Student A was low in the correct use of capitals. Her trouble here was only minor as she was just below the average for her grade. Her difficulty centered around the first words of quotations. Also in the field of English and grammar she was weak in parts and kinds of sentences. This being her lowest field she should devote some time towards its betterment.

Student B, age 15, is a sophomore. This girl was at the 90th percentile point for the complete battery. She was exceptionally high in all fields, but her punctuation was quite poor. In this area she was two years behind her grade level. In the other areas she was approximately the same amount ahead of her grade. It was quite evident that she should attempt to master this learning difficulty. Her most apparent trouble was in understanding the use of the comma.

Student C, age 13, is a freshman. His percentile on the total test was 85. This pupil has little conception of negative numbers. In his case a little practice with negative values would no doubt alleviate this difficulty. This boy was also quit low in punctuation. He was undoubtedly very confused in

all phases of punctuation for he over-punctuated excessively.

Student D, age 17, is a senior. This gentleman was only at the 20th percentile. However he showed excellent performance in mathematics. In English and grammar his troubles are numerous. In the field of reading he has practically no standing at all. Any questions that challenge his mathematics ability in the reading and English section of the test, he passed successfully. It seems that if this lad were approached in other subjects through his mathematics ability, he might be motivated to a greater extent. He appears to have the ability but lacks the interest to apply himself. However this is only an assumption. The author can go no further than assume because there was a lack of other evidence. To give this child the right kind of guidance other test scores and information are needed. The writer regrets that he did not have access to such information.

CONCLUSIONS

California Test Battery

Use of the results of the California Achievement Test has been illustrated in this study. The statistical data and analysis presented in this report appear to support the following conclusions:

1. The California Achievement Tests provide a list of specific strengths as well as problems, difficulties, and needs for each pupil as well as for the class as a whole.

2. The California Tests are helpful in locating the areas within a subject where improvement is needed most.

3. The results of the California Achievement Tests are advantageous in the aiding of individual pupils in his learning difficulties.

4. The California Achievement Tests gives any school a yardstick to measure its progress through comparison with the national norms.

In the diagnostic analysis for a whole class, the learning difficulties of each pupil were first tabulated individually and then combined to show what per cent of the class suffered from each type of learning disability. These can be treated as class problems. Where only a few members of a class experience a particular difficulty, pupils can be dealt with in smaller groups. The teacher can identify the particular strengths and weaknesses which pupils possess; that is, what learning tools they have to aid them in making progress and what they lack that will tend to defeat their efforts in attaining the objectives of educational activities.

After a period of constructive effort in eliminating the difficulties experienced by the class as a whole, by small groups, and by individual pupils as revealed by diagnostic analyses, it is usually advisable to repeat the diagnostic test first used, to determine how successful the effort at improvement has been. A few pupils will usually need additional assistance; and the wise teacher knows that she will

reap high dividends if she persists until these obstacles to learning are eliminated.

School X

From the results of this investigation on the achievement of school X, as indicated by the California Achievement Tests (Form AA), the following conclusions were reached. On the total battery the complete school showed either above average or average performance in comparison with national norms.

For the separate classes on the total battery, the freshman class placed quite high. The sophomore class gave a better than average performance. The junior class was in close alliance with the national norms. The senior class attained but did not excel the national average in their performance.

On the sub-tests the separate classes displayed the following characteristics. The freshman class is somewhat low in their reading vocabulary. The class was also low in spelling. The sophomore class had above average standings in all phases of the test. The juniors were a little below average in their reading vocabulary and mechanics of English and grammar. The senior class was low in all sub-tests except mathematics fundamentals.

School X was below par in their reading vocabulary. The school lacks understanding in the use of references. They are weak in the outlining of reports. In mathematics the school is low in the knowledge of Roman numerals, exponents, extraction

of roots, insurance and discounts, and dealing with abstract numbers. In the English and grammar section of the test, school X was weak in punctuation, sentence structure, and type of sentences.

An individual pupil's learning difficulties can be analyzed to some extent by using the California Achievement Test. The writer has illustrated its use by diagnosing the learning difficulties of four students of school X.

The author wishes to bring to light that none of the norms in this study were corrected in relation to intelligence quotient medians. This of course is highly desirable, if not imperative for valid results. Also other criteria should be available before real guidance could be extended to the pupils of school X.

The learner cannot be divided into parts representing his mental ability, his skills, his interests, his personality characteristics, and the like. These factors must be recognized merely as different aspects of a totally functioning human being.

For these reasons we must consider all of these aspects and others, when the learner is experiencing significant difficulties of any type. For example, an academic failure may be due to lack of interest, to insecurity arising in the home or in relation to teachers and classmates, or it may simply be the lack of ability. Overt misbehavior or withdrawing may be due to insecurity arising from lack of ability and subsequent

failure in school activities. Poor work may also be due, not to lack of ability, security, or interest, but to poor work habits, or inadequate basic skills.

The identification of learning difficulties through diagnostic testing, and their elimination, prepares the pupil for a successful attack on his other educational objectives. Educational diagnosis is the basis of intelligent teaching. In no other way can we preserve and improve the mental health of pupils and guarantee their optimum development in all desirable areas.

ACKNOWLEDGMENT

The author wishes to express his sincere appreciation for the guidance, constructive criticism, and helpful suggestions of Dr. H. Leigh Baker, Major Instructor, which made this study possible. He also wishes to thank his wife, Elizabeth, for the assistance and sympathetic understanding she has given in working out this report.

Gratitude is expressed to all other persons who gave assistance in the preparation of this report.

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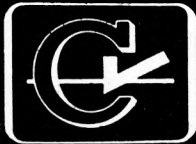
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APPENDIX

California Achievement Test (Form AA) Norms Complete Battery



C^{HAMPION}
L A S P **N**^{O. K-55}
 6x9



CALIFORNIA TEST BUREAU

SUPPLEMENTARY
MANUAL

California Achievement Tests
Complete Battery

READING — MATHEMATICS — LANGUAGE

(Formerly Progressive Achievement Tests — Advanced Battery)

Advanced • GRADES 9 to 14 • forms AA • BB
CC

DEvised BY ERNEST W. TIEGS AND WILLIS W. CLARK

NOTE: This Supplementary Manual is for use when giving the Complete Battery (Reading, Mathematics, and Language) of the California Achievement Tests. Directions for Administration appear on page 4 of this folder; the Profile on page 2; and the Tables of Norms on page 3.

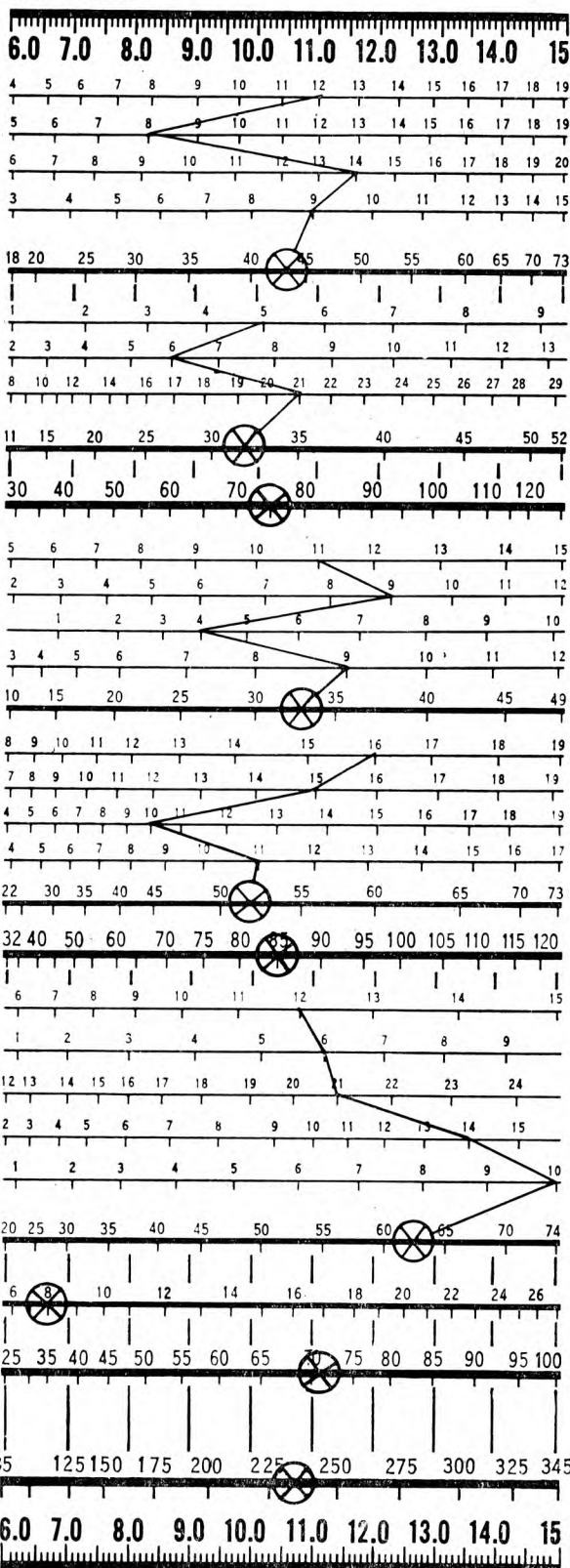
SAMPLE PROFILE — COMPLETE BATTERY

A Test Given in January to a 10th Grade Student. Age, 183 Months. Mental Age, 192 Months.

TEST	SECTION	POSSIBLE SCORE	STUDENT'S SCORE
1. READING VOCABULARY	A. Mathematics	22	<u>12</u>
	B. Science	23	<u>8</u>
	C. Social Science	22	<u>14</u>
	D. General	23	<u>9</u>
	TOTAL (A+B+C+D)	90	<u>43</u> <u>10.4</u> <u>50</u>
2. READING COMPREHENSION	E. Following Directions	10	<u>5</u>
	F. Reference Skills	15	<u>6</u>
	G. Interpretations	30	<u>21</u>
	TOTAL (E+F+G)	55	<u>32</u> <u>9.8</u> <u>40</u>
TOTAL READING		145	<u>75</u> <u>10.2</u> <u>50</u>
3. MATHEMATICS REASONING	A. Number Concept	20	<u>11</u>
	B. Symbols and Rules	15	<u>9</u>
	C. Numbers & Equations	10	<u>4</u>
	D. Problems	15	<u>9</u>
	TOTAL (A+B+C+D)	60	<u>33</u> <u>10.8</u> <u>60</u>
4. MATHEMATICS FUNDAMENTALS	E. Addition	20	<u>16</u>
	F. Subtraction	20	<u>15</u>
	G. Multiplication	20	<u>10</u>
	H. Division	20	<u>11</u>
	TOTAL (E+F+G+H)	80	<u>52</u> <u>12.0</u> <u>40</u>
TOTAL MATH.		140	<u>85</u> <u>10.4</u> <u>50</u>
5. MECH. OF ENGLISH AND GRAMMAR	A. Capitalization	15	<u>12</u>
	B. Punctuation	10	<u>6</u>
	C. Words and Sentences	25	<u>21</u>
	D. Parts of Speech	17	<u>14</u>
	E. Syntax	13	<u>10</u>
	TOTAL (A+B+C+D+E)	80	<u>63</u> <u>12.8</u> <u>85</u>
6. SPELLING	TOTAL SPELLING	30	<u>8</u> <u>6.7</u> <u>5</u>
TOTAL LANGUAGE		110	<u>71</u> <u>11.1</u> <u>60</u>
Handwriting			<u>10.0</u>
TOTAL TEST		395	<u>231</u> <u>10.6</u> <u>50</u>
Grade Placement			
Percentile Rank			

DIAGNOSTIC PROFILE (Chart Student's Scores Here)

Grade Placement



INTELL. G.P. 10.3
ACTUAL. G.P. 10.4
CHRON. G.P. 9.9

PERCENTILE NORMS **CALIFORNIA ACHIEVEMENT TESTS** **ADVANCED — ALL FORMS**

Use COLUMN 1 norms when scoring tests given in first and second months of a student's assignment to a grade
 Use COLUMN 2 norms when scoring tests given in third through eighth month of a student's assignment to a grade
 Use COLUMN 3 norms when scoring tests given in ninth and tenth months of a student's assignment to a grade

PERCENTILE NORMS			GRADE 9	GRADE 10	GRADE 11	GRADE 12	GRADE 13	GRADE 14
COLUMN 1	COLUMN 2	COLUMN 3	TOTAL TEST	TOTAL TEST	TOTAL TEST	TOTAL TEST	TOTAL TEST	TOTAL TEST
99	99	99	13.5+	14.5+	15.0+	15.7+	15.9+	16.1+
95	95	95	12.6-13.4	13.8-14.4	14.5-14.9	15.2-15.6	15.6-15.8	15.8-16.0
90	90	90	11.9-12.5	13.1-13.7	14.0-14.4	14.8-15.1	15.4-15.5	15.6-15.7
85	85	80	11.3-11.8	12.5-13.0	13.7-13.9	14.4-14.7	15.0-15.3	15.4-15.5
80	80	75	10.9-11.2	12.1-12.4	13.3-13.6	14.1-14.3	14.7-14.9	15.3
75	75	70	10.6-10.8	11.7-12.0	12.8-13.2	13.8-14.0	14.4-14.6	15.2
75	70	60	10.3-10.5	11.3-11.6	12.3-12.7	13.3-13.7	14.2-14.3	15.0-15.1
70	60	50	9.8-10.2	10.8-11.2	11.8-12.2	12.8-13.2	13.8-14.1	14.8-14.9
60	50	40	9.2-9.7	10.2-10.7	11.2-11.7	12.2-12.7	13.2-13.7	14.2-14.7
50	40	30	8.8-9.1	9.7-10.1	10.7-11.1	11.6-12.1	12.6-13.1	13.6-14.1
40	30	25	8.4-8.7	9.2-9.6	10.1-10.6	10.9-11.5	11.9-12.5	12.8-13.5
25	25	20	8.1-8.3	8.6-9.1	9.4-10.0	10.3-10.8	11.1-11.8	12.0-12.7
20	20	15	7.7-8.0	8.2-8.5	8.9-9.3	9.7-10.2	10.4-11.0	11.3-11.9
15	15	10	7.4-7.6	7.6-8.1	8.3-8.8	9.0-9.6	9.6-10.3	10.5-11.2
10	10	10	6.8-7.3	7.2-7.5	7.5-8.2	8.1-8.9	8.8-9.5	9.5-10.4
5	5	5	5.9-6.7	6.3-7.1	6.7-7.4	7.1-8.0	7.6-8.7	8.3-9.4
1	1	1	5.8—	6.2—	6.6—	7.0—	7.5—	8.2—

ADJUSTMENT OF NORMS IN RELATION TO INTELLIGENCE QUOTIENT MEDIANS

%ILE RANK	GRADE 9		GRADE 10		GRADE 11		GRADE 12		GRADE 13		GRADE 14	
	I.Q.	Total Test	I.Q.	Total Test	I.Q.	Total Test	I.Q.	Total Test	I.Q.	Total Test	I.Q.	Total Test
99	116	+1.63	117	+1.63	118	+1.62	120	+1.62	124	+1.47	127	+1.09
95	112	+1.42	113	+1.44	114	+1.42	116	+1.45	121	+1.33	124	+ .91
90	109	+1.08	110	+1.09	111	+1.08	113	+1.13	118	+1.04	121	+ .70
80	106	+ .66	107	+ .66	108	+ .68	110	+ .75	115	+ .64	119	+ .46
70	104	+ .39	105	+ .45	106	+ .49	107	+ .51	113	+ .46	117	+ .33
60	102	+ .23	104	+ .24	105	+ .24	106	+ .24	112	+ .24	116	+ .20
50	101.5	.00	103	.00	104	.00	105	.00	110	.00	114.5	.00
40	99	— .18	100	— .21	101	— .18	102	— .19	108	— .16	113	— .16
30	97	— .35	98	— .41	99	— .37	100	— .38	107	— .34	111	— .38
20	95	— .61	96	— .85	97	— .80	99	— .77	106	— .74	109	— .80
10	92	— .97	93	— 1.25	94	— 1.22	95	— 1.21	103	— 1.16	106	— 1.30
5	88	— 1.33	89	— 1.54	90	— 1.51	91	— 1.52	99	— 1.44	103	— 1.62
1	84	— 1.56	85	— 1.76	86	— 1.68	87	— 1.71	96	— 1.62	99	— 1.78

Grade placement and age norms are based on a student population having a median I.Q. of 101.5 in grade 9, 103 in grade 10, 104 in grade 11, 105 in grade 12, 110 for college freshmen, and 114.5 for college sophomores.

GRADE PLACEMENT AND AGE NORMS **CALIFORNIA ACHIEVEMENT TESTS** **ADVANCED — ALL FORMS**

Grade Place.	Total Test	Av. C. A. (mos.)*	Av. M. A. (mos.)**	Grade Place.	Total Test	Av. C. A. (mos.)*	Av. M. A. (mos.)**
4.0	1-16	111	111	10.2	221-223	186-7	190-1
4.5	17-38	117	117	10.3	224-225	188	192
5.0	39-58	123	123	10.4	226-228	189	193-4
5.5	59-63	129	129	10.5	229-230	190	195-6
5.6	64-67	130-1	130-1	10.6	231-232	191	197
5.7	68-72	132	132	10.7	233-234	192-3	198
5.8	73-76	133-4	133-4	10.8	235-236	194	198
5.9	77-81	135	135	10.9	237-238	195	198
6.0	82-86	136	136	11.0	239-241	196	199
6.1	87-91	137	137	11.1	242-244	197	200
6.2	92-95	138-9	138-9	11.2	245-247	198	200
6.3	96-99	140	140	11.3	248-249	199	200
6.4	100-104	141	141	11.4	250-251	200	200
6.5	105-108	142	142	11.5	252-253	201	200
6.6	109-112	143	143	11.6	254-255	202	200
6.7	113-116	144-5	144-5	11.7	256-257	203-4	200
6.8	117-121	146	146	11.8	258-260	205	200
6.9	122-124	147	147	11.9	261-263	206	200
7.0	125-128	148	148	12.0	264-265	207	201
7.1	129-132	149	149	12.1	266-267	208	202
7.2	133-136	150-1	150-1	12.2	268-270	209-10	202
7.3	137-139	152	152	12.3	271-273	211	202
7.4	140-143	153	153	12.4	274-276	212	202
7.5	144-147	154	154	12.5	277-278	213	202
7.6	148-151	155	155	12.6	279-280	214	202
7.7	152-154	156-7	156-7	12.7	281-283	215-6	203
7.8	155-157	158	158	12.8	284-285	217	204
7.9	158-161	159	159	12.9	286-287	218	205
8.0	162-165	160	160	13.0	288-290	219	206
8.1	166-168	161	161	13.1	291-293	220	207
8.2	169-171	162-3	162-3	13.2	294-295	221-2	208
8.3	172-174	164	164	13.3	296-297	223	209
8.4	175-177	165	165	13.4	298-300	224	210
8.5	178-180	166	166	13.5	301-302	225	211
8.6	181-183	167	167	13.6	303-305	226	212
8.7	184-185	168-9	168-9	13.7	306-308	227-8	213
8.8	186-187	170	170	13.8	309-311	229	214
8.9	188-190	171	171	13.9	312-313	230	215
9.0	191-193	172	172-3	14.0	314-317	231	216
9.1	194-196	173	174	14.1	318-320	232	217
9.2	197-199	174-5	175-6	14.2	321-323	233	218
9.3	200-201	176	177	14.3	324-326	234	219
9.4	202-204	177	178-9	14.4	327-329	235	219
9.5	205-206	178	180	14.5	330-335	236	219
9.6	207-208	179	181-2	14.7	336-341	238	220
9.7	209-210	180-1	183	15.0	342-349	241	223
9.8	211-213	182	184-5	15.2	350-354	243	224
9.9	214-215	183	186	15.5	355-361	246	225
10.0	216-218	184	187-8	15.7	362-367	248	227
10.1	219-220	185	189	16.0	368-373	251	228
				16.2	374-379	253	229
				16.5+	380+	253	230

*Subject, educational, or chronological age equivalent to grade placement.

**Median mental ages of the respective grade placements used in establishing Intelligence Grade Placement.

Complete Battery — General Instructions

INFORMATION AND DESCRIPTION

Read the manual for each separate test (Reading, Arithmetic, and Language) for information regarding authorship, description of the tests, reliability and validity of the separate tests, use of diagnostic profile, use of diagnostic analysis, and other uses of test results. This information is found in Parts 1 and 2 of the manuals for the separate tests.

RELIABILITY

Reliability of the separate tests is given in the separate manuals for each particular test. The reliability of the Complete Battery, determined by averaging the single grade reliabilities of grades 9 to 12 inclusive, thus providing a typical reliability coefficient for a single grade range, is .98, with a Standard Error of Measurement of 0.33.

ADMINISTRATION OF THE TOTAL BATTERY

Before administering the complete Battery, read the Directions for Administration which appear in PART 3 of each of the separate manuals. The page numbers in the battery test booklet are identical with those in the individual tests.

Student answers may be marked on the test booklets, on machine-scoring answer sheets, or on the C. T. B. SCOREZE answer sheets just as in the case of the individual tests.

Note also the necessity for rest periods or recesses between the major tests (Reading, Arithmetic, and Language) as well as the permissible rest periods between sub-test sections of each of these major tests.

As each individual test is administered (Reading, Arithmetic, and Language) have the students read the INSTRUCTIONS TO STUDENTS appearing in advance of each major test section. In giving the Arithmetic and Language tests tell them to turn to the cover-page of the test they are about to take instead of turning back to the front page.

Assist students in locating the proper test, if necessary.

Be sure to omit the directions for filling in the back cover-page if students have already done so.

SCORING

Instructions for scoring the tests will be found in PART 4 of each separate manual.

The Complete Battery total score is obtained by adding the student's score on Total Reading,

Total Mathematics, and Total Language, as illustrated on page 2 of this supplementary manual.

DIAGNOSTIC PROFILE

Use the instructions and tables of norms from each of the individual manuals to complete the three sections of the total battery profile. The illustrative sample profile in PART 2 of each manual is identical with the similar section of the sample battery profile on the inside pages of this supplementary manual.

INTERPRETATION

Suggestions for the interpretation and use of test results will be found in PART 2 in each of the individual manuals.

GRADE PLACEMENT

The grade placement for the total battery may be obtained by locating the student's total score for the battery in the Grade Placement Norms table and taking the corresponding grade placement. The Grade Placement Norms table for the Complete Battery appears on page 3 of this supplementary manual.

PERCENTILE RANK

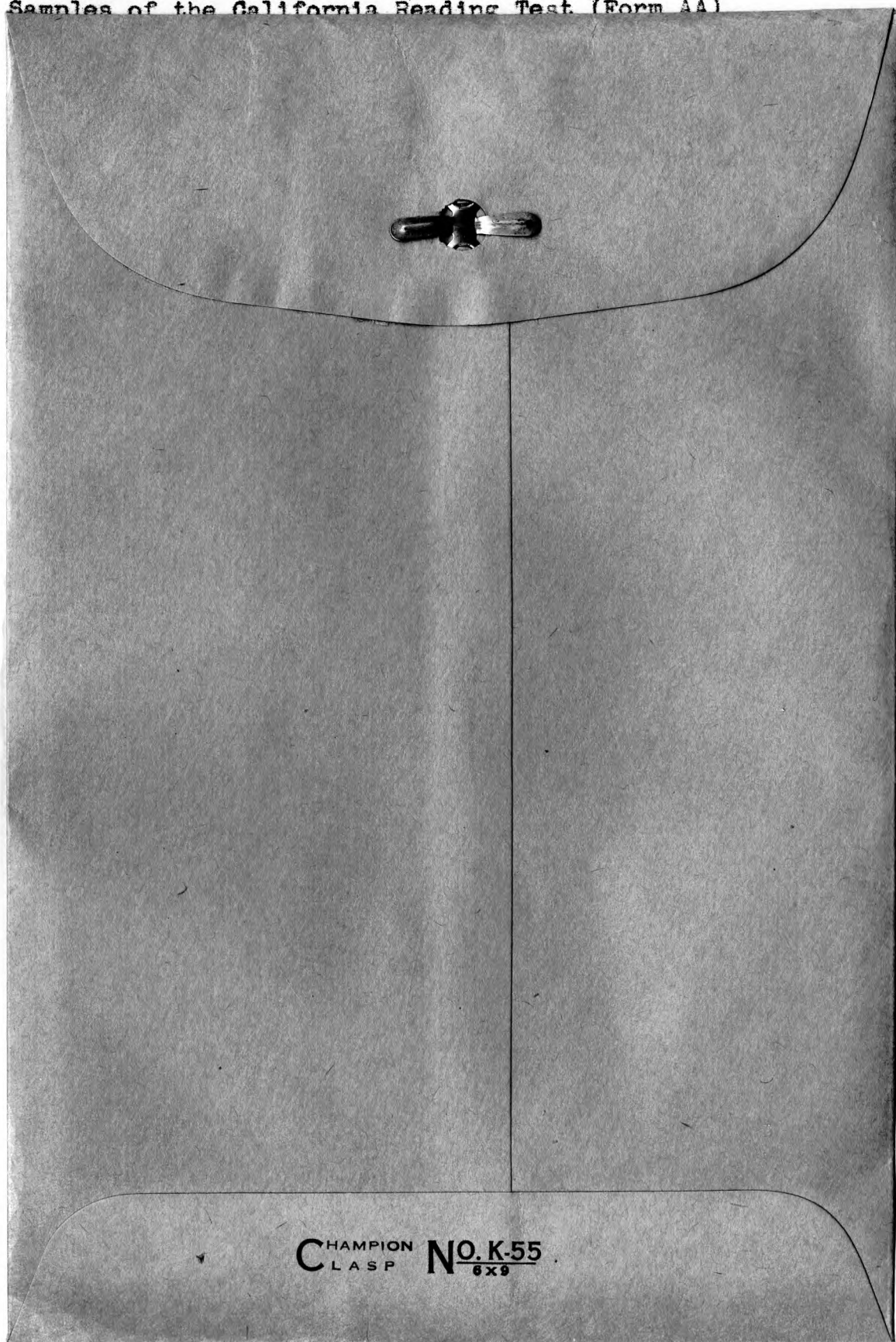
Percentile rank comparisons may be made between the individual tests (Reading, Arithmetic, and Language) by using the tables in the manuals of the individual tests. The percentile rank for the total battery can be obtained from the Percentile Norms table which appears on page 3 of this supplementary manual.

DIFFERENTIATED NORMS

The table in the lower left-hand corner of page 3 of this supplementary manual presents the opportunity to adjust norms in relation to the intelligence quotient medians of various groups. The table shows what variation in achievement may be expected above (+) and below (—) the test norms for class or grade groups possessing various median intelligence quotients. Thus a tenth grade class with a median I.Q. of 105 should be expected to obtain a median score one-half year above norm; a twelfth grade class with a median I.Q. of 99 may be expected to fall about three-fourths of a year below norm.

EXAMINER'S NOTES

Samples of the California Reading Test (Form AA)



C^{HAMPION}
L A S P **NO. K-55**
6x9

DIRECTIONS: Mark as you are told the number of the word that means the same or about the same as the first word.

SAMPLE: A. large ¹ little ² big
 ³ zero ⁴ angle

Correct Test
Booklet Mark

2 A

Correct Answer
Sheet Mark

A 1 2 3 4

TEST 1 — SECTION A

1. multiplying ¹ etching ² concrete
 ³ combining ⁴ following 2 ¹
2. unequal ¹ known ² irregular
 ³ voluble ⁴ opaque 2 ²
3. frequencies ¹ futures ² peaks
 ³ recurrences ⁴ happenings 3 ³
4. ratio ¹ gear ² draft
 ³ centigrade ⁴ rate 4 ⁴
5. velocity ¹ wind ² speed
 ³ cluster ⁴ expenditure 2 ⁵
6. breadth ¹ size ² height
 ³ volume ⁴ width 4 ⁶
7. antecedent ¹ location ² visibility
 ³ anticlimax ⁴ preceding 4 ⁷
8. theorem ¹ arc ² radius
 ³ principle ⁴ periscope 3 ⁸
9. bisect ¹ halve ² quarter
 ³ cancel ⁴ blight 1 ⁹
10. asset ¹ property ² assize
 ³ artifice ⁴ degree 1 ¹⁰
11. supplement ¹ counterpart ² whole
 ³ sphere ⁴ diamond 1 ¹¹
12. derive ¹ deduce ² defer
 ³ depend ⁴ distract 4 ¹²
13. formulate ¹ state ² retain
 ³ enervate ⁴ destroy 1 ¹³
14. inversely ¹ opposite ² extremely
 ³ endlessly ⁴ terminally 1 ¹⁴
15. poles ¹ polygons ² extremities
 ³ knowns ⁴ intervals 3 ¹⁵
16. secant ¹ scarp ² transversal
 ³ rhomboid ⁴ cylinder 1 ¹⁶
17. polygonal ¹ multangular ² curved
 ³ internal ⁴ polyglot 1 ¹⁷
18. sway ¹ conceive ² ordain
 ³ ostracize ⁴ oscillate 3 ¹⁸
19. fee ¹ money ² statement
 ³ suit ⁴ compensation 1 ¹⁹
20. adjacent ¹ contiguous ² amenable
 ³ torrential ⁴ protractile 4 ²⁰
21. monomial ¹ many ² one
 ³ few ⁴ biannual 2 ²¹
22. vertex ¹ bottom ² root
 ³ origin ⁴ summit 2 ²²

TEST 1 — SECTION B

23. prairie ¹ valley ² plain
 ³ culvert ⁴ river 2 ²³
24. subterranean ¹ bidden ² prosaic
 ³ underground ⁴ spastic 3 ²⁴
25. luminous ¹ opaque ² shallow
 ³ mordant ⁴ brilliant 4 ²⁵
26. apparatus ¹ filament ² mechanism
 ³ quadrant ⁴ synchronism 2 ²⁶
27. home ¹ abbe ² aide
 ³ abider ⁴ abode 4 ²⁷
28. flora ¹ plants ² hydrogen
 ³ lignites ⁴ pomes 1 ²⁸
29. hygienic ¹ anaesthetic ² sanitary
 ³ tertiary ⁴ allotropic 1 ²⁹
30. spawn ¹ offspring ² chicory
 ³ embryo ⁴ ebonite 1 ³⁰
31. transparent ¹ quadrant ² nascent
 ³ lucent ⁴ qualitative 3 ³¹
32. bacteria ¹ algae ² crustacea
 ³ microorganisms ⁴ bagasse 1 ³²
33. deterioration ¹ reflection ² fusion
 ³ amplification ⁴ erosion 4 ³³
34. dissect ¹ catalyze ² neutralize
 ³ pulverize ⁴ analyze 4 ³⁴
35. manikin ¹ charlatan ² poser
 ³ model ⁴ masseur 3 ³⁵
36. fossilize ¹ mummify ² putrify
 ³ pulverize ⁴ meteorize 1 ³⁶
37. assimilate ¹ inhabit ² incorporate
 ³ graduate ⁴ incubate 2 ³⁷
38. phenomena ¹ photometer ² phenol
 ³ occurrences ⁴ occlusion 3 ³⁸
39. loam ¹ soil ² furrow
 ³ dune ⁴ dome 1 ³⁹
40. repercussion ¹ reverberation ² rut
 ³ repudiation ⁴ reproduction 1 ⁴⁰
41. precipitate ¹ conserve ² ration
 ³ condense ⁴ devitalize 3 ⁴¹
42. ecology ¹ barbarism ² batiste
 ³ birthplace ⁴ bionomics 3 ⁴²
43. vaporize ¹ solve ² volatilize
 ³ vulcanize ⁴ condense 4 ⁴³
44. reciprocally ¹ mutually ² truly
 ³ residually ⁴ resultantly 4 ⁴⁴
45. effervescent ¹ humid ² permeated
 ³ concentrated ⁴ aerated 3 ⁴⁵

DIRECTIONS: Mark as you are told the number of the word that means the same or about the same as the first word.

SAMPLE: B. large 1 little 2 big
 3 zero 4 angle

Correct Test
Booklet Mark
2 B

Correct Answer
Sheet Mark
B 1 2 3 4

TEST 1 — SECTION C

46. skill 1 kilt 2 kindness
 3 kingcraft 4 craftsmanship 4 46
47. minister 1 teacher 2 proctor
 3 pastor 4 interval 3 47
48. department 1 deputy 2 revision
 3 subdivision 4 house 3 48
49. system 1 segment 2 secretion
 3 scheme 4 sympathy 1 49
50. propose 1 portray 2 suggest
 3 debate 4 promenade 2 50
51. reserves 1 reenforcements 2 loot
 3 requests 4 services 3 51
52. encounter 1 endive 2 exciter
 3 combat 4 exchange 4 52
53. magistrate 1 citizen 2 magician
 3 speaker 4 ruler 4 53
54. tax 1 discount 2 dollar
 3 interest 4 levy 4 54
55. confederation 1 peace 2 alliance
 3 allegation 4 conference 2 55
56. concord 1 concession 2 agreement
 3 conduit 4 congress 2 56
57. reconstruct 1 rehabilitate 2 recur
 3 habituate 4 reconvey 4 57
58. monastery 1 monolith 2 abbey
 3 abbot 4 monetary 4 58
59. pilgrimage 1 traveler 2 pillage
 3 poverty 4 journey 4 59
60. recompense 1 parlance 2 charge
 3 payment 4 admission 2 60
61. protection 1 selection 2 portion
 3 monopoly 4 monotone 3 61
62. principle 1 layer 2 preposition
 3 primer 4 law 4 62
63. canon 1 book 2 decree
 3 document 4 league 2 63
64. vassal 1 vagabond 2 serpent
 3 velarium 4 serf 4 64
65. precedent 1 power 2 purpose
 3 pattern 4 proposal 4 65
66. plebiscite 1 citizen 2 lord
 3 referendum 4 manor 4 66
67. heretic 1 skeptic 2 dissenter
 3 hearsay 4 despotic 3 67

TEST 1 — SECTION D

68. majority 1 popularity 2 priority
 3 familiarity 4 plurality 1 68
69. plot 1 plan 2 plenty
 3 farce 4 episode 1 69
70. stanza 1 stagnation 2 veracity
 3 stint 4 verse 4 70
71. spokesman 1 wheelman 2 fitter
 3 interpreter 4 helmsman 3 71
72. morbid 1 gloomy 2 mordant
 3 glutenous 4 mortal 1 72
73. zest 1 engraving 2 ensemble
 3 enjoyment 4 enhancement 4 73
74. verbal 1 verbose 2 tuneful
 3 oral 4 speedy 3 74
75. somber 1 melancholy 2 wanton
 3 habitual 4 obsequious 2 75
76. rebirth 1 renown 2 receiver
 3 repertory 4 regeneracy 4 76
77. renaissance 1 revival 2 renitency
 3 rendition 4 recorder 1 77
78. terse 1 revisory 2 decelerated
 3 concise 4 perforated 4 78
79. continuity 1 concord 2 sequence
 3 punctuality 4 consolidation 2 79
80. supple 1 plump 2 polite
 3 pliant 4 pointed 1 80
81. diction 1 dictation 2 platitude
 3 dictum 4 phraseology 4 81
82. subtle 1 reluctant 2 seldom
 3 secret 4 shrewd 1 82
83. urban 1 metropolitan 2 rural
 3 lofty 4 narrow 2 83
84. colloquial 1 translated 2 verbose
 3 vernacular 4 derelict 4 84
85. verbatim 1 factually 2 precisely
 3 visually 4 execrably 2 85
86. hieroglyphic 1 script 2 graph
 3 verse 4 monolith 1 86
87. coincident 1 blase 2 concomitant
 3 concessive 4 conciliative 4 87
88. sublimity 1 villosity 2 sophistry
 3 majesty 4 conquest 4 88
89. stereotyped 1 graphed 2 replete
 3 conventional 4 pervading 1 89
90. enigma 1 ensign 2 ennui
 3 regret 4 riddle 3 90

DIRECTIONS: Read the following directions. Mark as you are told the number or letter of each correct answer.

TEST 2 — SECTION E

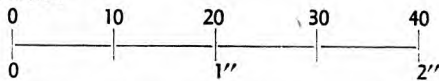
91. Read these numbers:

6 4 3 9 7 8 6 1 9 0 4 6

Mark the letter which shows the third number to the left of the second 9.

a 6 b 8 c 4 d 0 e 9 b 91

92. On the following scale of miles, one inch (1") represents twenty miles:



Mark the letter of the number which shows how many miles are represented by $1\frac{3}{4}$ inches.

a 40 b 45 c 35 d 30 e 20 C 92

93. The word, ameliorated, means bettered, or improved. Mark the number of the sentence which uses the word, ameliorated, correctly.

1. Her anxieties were greatly ameliorated.
2. The working conditions in the factory had been ameliorated

2 93

94. Regular adverbs are formed by adding *ly* to the adjective; such as hopeful, hopefully. Mark the number of the word which is the adverb formed from the adjective, light.

- ¹ lightest ² lightly
- ³ light ⁴ lights

2 94

95. In determining a leap year, the date numbers must be divisible by four; and any date number divisible by four and ending in two zeros must also be divisible by four hundred. For example, the year 2000 will be a leap year, while the year 1800 was not. Mark the letter of the date which will be a leap year.

a 2500 b 3800 c 4500 d 3600 d 95

96. A modifier should not be placed between *to* and the verb-form in the infinitive. The violation of this rule results in what is called the split infinitive. Mark the number of the sentence in which the modifier is incorrectly placed.

1. He was very eager to carry swiftly the important message from state to state.
2. He was very eager to swiftly carry the important message from state to state.
3. He was very eager to carry the important message swiftly from state to state.

2 96

97. Chemical elements may be expressed in symbols. When two or more elements are combined, they are expressed in a formula. Few substances can combine in the same proportion. For instance, one part of oxygen represented by the symbol, O, takes two parts of hydrogen, represented by the symbol, H. H₂O is the chemical formula for water. Hydrogen forms the basis of all relationships between the elements, because of its low atomic weight. Disodium phosphate is composed of two parts of sodium, (Na), one part of hydrogen, (H), one part of phosphorus, (P), and four parts of oxygen, (O). Mark the number of the correct formula for disodium phosphate.

- ¹ Na₂H₄PO₄ ² Na₂HPO₄
- ³ Na HPO ⁴ H₂Na PO₄

4 97 ✓

98. The Latin verb, *tacio*, appears in English in a much shortened form as the suffix *fy* meaning to make. English takes the adjective, *magnus*, drops the *us* to add *i*, and completes a verb with the suffix *fy*. This verb, *magnify*, means to make large. Using this principle, from *clarus*, a Latin adjective meaning clear, mark the number of the English verb which means to *make clear*.

¹ clarify ² clarity ³ clarify ⁴ explain 3 98

99. The standard time meridians of the United States are those whose longitudes west of Greenwich are 75°, 90°, 105°, and 120°. A difference of 15° change in longitude corresponds to a difference in time of one hour. The time of each of these standard meridians is 5, 6, 7, and 8 hours, respectively, slower than Greenwich Time. They are called Eastern, Central, Mountain, and Pacific Time, respectively. Mark the letter which shows what time it is at 105° West of Greenwich when it is 3 P.M. at Greenwich.

^a 8 A.M. ^b 10 P.M. ^c 6 A.M. ^d 10 A.M. ^e 9 P.M. b 99

100. The volume of a pyramid is found by multiplying $\frac{1}{3}$ of the area of the base by the altitude. In this problem, the pyramid has a square base, so the area is found by multiplying the length of one side by itself. Mark the letter which shows the number of cubic inches in the volume of a pyramid with a base 6 inches square and a height of 4 inches.

^a 48 ^b 144 ^c 24 ^d 72 ^e 8 d 100

STOP

NOW WAIT FOR
FURTHER INSTRUCTIONS

DIRECTIONS: Mark as you have been told the number or letter of each correct answer.

TEST 2 — SECTION F

101. A glossary contains
¹ index ² definitions ³ pictures 2 101
102. An index is found in what part of a book?
¹ beginning ² middle ³ end 3 102
103. A table of contents is found in what part of a book?
¹ beginning ² middle ³ end 1 103
104. An annotated bibliography contains
¹ comments ² definitions ³ quotations 3 104 ✓
105. *ibid.* means
¹ later ² the same ³ succeeding 3 105 ✓
106. *q.v.* means
¹ refer to ² quantity unknown ³ well written 1 106

✓ Look at this partial index and find the answers to questions 107, 108, 109.

INDEX

Income: National, 247; taxes, 206.

Industry: In Alaska, 132; in Asia, 162; in Arabia, 141; in Belgium, 179; in Canada, 148; in Denmark, 186; in Finland, 198; in Norway, 174; in Sweden, 154; in Turkey, 146.

Insects, 76.

Institutions: Civil, 314, 319-322, 346; penal, 335.

Interest: Compound, 92; legal rate, 139; rate on loans, 178; simple, 87; tables, 47-49.

107. Mark the letter which shows the page on which information on insects will be found.
^a 335 ^b 92 ^c 87 ^d 76 ^e 47-49 d 107
108. Mark the letter which shows the page on which information on Canadian industry will be found.
^a 132 ^b 148 ^c 146 ^d 92 ^e 206 b 108
109. Mark the letter which shows the page on which information on simple interest will be found.
^a 206 ^b 92 ^c 87 ^d 47-49 ^e 178 c 109

GO

RIGHT ON TO
THE NEXT PAGE

- ✓ Decide which are the TWO best topics to look up in an encyclopedia or reference book for information on the following subjects. Mark the numbers of these two topics.

Sample C: Skating in Holland

- 1 Skating 2 Wrestling
3 Baseball 4 Football
5 Recreation in Holland

Answers to Sample C:

Correct Test
Booklet Mark

1-5 c

Correct Answer
Sheet Mark

C 1-2 1-3 1-4 1-5 2-3
2-4 2-5 3-4 3-5 4-5
: : : : :
: : : : :
: : : : :

110. Cotton Growing in Georgia
1 Spinning 2 Cotton 3 Georgia
4 Weaving 5 The Cotton Gin 2-3 110
111. Trans-Oceanic Communication by Telephone
1 Radio 2 Oceans 3 Inventors
4 Cables 5 Newspapers 4-2 111
112. Harmful Insects in Wheat Raising
1 Agriculture 2 Industry
3 Wheat 4 Destruction 5 Pests 5-3 112
113. Golf in America
1 Schools 2 Courses 3 Golf
4 Sports 5 America 3-4 113

In making a scientific investigation, the following alphabetical list of items may be used as an outline:

- A. Conclusions
B. Data of Investigation
C. Interpretation of Data
D. Method
E. Purpose
F. Title

If the above items were presented in the proper order in a final report,

114. mark the letter that shows which item would be third.
B C D E F D 114
115. mark the letter that shows which item would be fifth.
A B C D E B 115

STOP

NOW WAIT FOR
FURTHER INSTRUCTIONS

TEST 2—SECTION G

- ✓ Read the following excerpt from a speech:

"Fear and worry based on unknown danger contribute to social unrest and economic demoralization. If, as our Constitution tells us, our Federal Government was established among other things 'to promote the general welfare,' it is our plain duty to provide for that security upon which welfare depends.

"... we may well undertake the great task of furthering the security of the citizen and his family through social insurance. This is not an untried experiment. Lessons of experience are available from states, from industries, and from many nations of the civilized world. The various types of social insurance are interrelated, and I think it is difficult to attempt to solve them piecemeal. Hence, I am looking for a sound means which I can recommend to provide at once security against several of the disturbing factors in life—especially those which relate to unemployment and old age.

"I believe there should be a maximum of cooperation between the states and the Federal Government. I believe that the funds necessary to provide this insurance should be raised by contribution rather than by increase in general taxation. Above all, I am convinced that social insurance should be national in scope, although the several states should meet at least a large portion of the cost of management, leaving to the Federal Government the responsibility of investing, maintaining, and safeguarding the funds consisting of the necessary insurance reserves.

"This seeking for a greater measure of welfare and happiness does not indicate a change in values. It is rather a return to values lost in the course of our economic development and expansion."

GO

RIGHT ON TO
THE NEXT PAGE

TEST 2 — SECTION G (Continued)

✓ Mark as you have been told the number of each correct answer. You may look back to find the answers.

116. The central idea of the speech is
¹ social unrest ² social insurance ³ economics 2 116
117. General welfare, in the speech, means
¹ the good of all ² public charity ³ care of the sick and aged 1 117
118. Security means
¹ divided wealth ² protection ³ increased taxes 2 118
119. Social insurance was said to be
¹ a suggestion ² a new idea ³ a tried experiment 3 119
120. Social insurance was intended to benefit directly
¹ the world ² the citizen and family ³ industry 2 120
121. Social insurance was designed to care for
¹ people out of work ² serious disasters ³ criminals 1 121
122. The speaker believed the cost of social insurance should be met by
¹ contributions ² taxes ³ the Federal Government 1 122
123. The administration of the plan should be vested in
¹ each State ² United States Government ³ Federal Banks 2 123
124. The speaker thought social insurance would
¹ create new values ² reestablish lost ideals ³ overburden the Government 2 124

✓ Read the following article:

The first steam engine was invented by Hero during the second century before the birth of Christ. However, there is no record of its having been put to useful work other than to demonstrate the law of motion, namely, that every action is accompanied by an equal and opposite reaction. Other experimenters, prior to Watt, were Desaguliers, DeCaus, Branca, Savery, Popin, Cawley and Newcomen.

Modern steam engines are mechanical devices which utilize the pressure of steam in transforming the energy of heat into useful work. The inventions of Watt, in this respect, opened up industrial opportunities for the steam engine. His most significant invention was the development of the separate condenser, patented in 1769. This provided a chamber which rapidly condensed the steam when it left the cylinder containing the piston. The condensation occurred because cool air or water was applied to the outside surface of the chamber. In order to keep this chamber empty so that the hot steam would rush into it, Watt designed an air pump to draw out the water and condensed steam.

He also enclosed the cylinder to conserve heat energy and covered the top of the cylinder so that pure steam might be used to force the piston downward.

In operation, the engine utilized a system of valves. When the piston began to move down the cylinder, an exhaust valve opened into the separate condenser. The escaping steam relieved pressure below the piston while the steam valve at the top of the cylinder opened to admit steam above the piston. When the piston reached the bottom of the cylinder, the two valves at the top and bottom closed and a middle valve, called the equilibrium, opened. When this valve was released, the piston moved back into its original position due to the weight of the pump rod which joined the piston to other parts of the engine.

TEST 2—SECTION G (Continued)

✓ Mark the number of each correct answer. You may look back to find the answers.

125. The central idea of the preceding article is
1 inventors 2 machinery 3 the steam engine 3 125
126. The instrument invented by Hero illustrates the application of the law of
1 motion 2 velocity 3 force 1 126
127. According to the article the number of persons contributing to the development of steam power before Watt was
1 one 2 eight 3 nine 3 127
128. Watt's most significant invention was
1 the piston 2 the separate condenser 3 the vacuum container 2 128
129. Steam engines transform the energy of heat into
1 steam 2 mechanics 3 work 1 129
130. The portion of the engine around which Watt made improvements is the
1 air chamber 2 feed pump 3 cylinder and piston 1 130
131. The inventor made the cylinder into
1 a steam pressure chamber 2 an air chamber 3 a vacuum 1 131
132. Watt joined his new appliances to the original steam engine by
1 pumps 2 chambers 3 valves 2 132

GO

RIGHT ON TO THE
NEXT SELECTION

✓ Read the following statement:

Standardized tests derive their name from the fact that standards or norms have been established by giving the tests to an extensive sampling of students in representative school districts. After compiling the results of such tests, it is possible to compare the responses of any person with the standards thus determined.

Other characteristics of this type of test are that it is objective and has alternate

forms. The test situations are prepared so that there is only one correct response for each item. Some standardized tests have as many as four or five alternate equivalent forms which may be used for subsequent examinations.

This standardized test which you are now taking is also diagnostic; that is, it is so organized that responses may be readily analyzed to show strengths and weaknesses of given students in the essential skills of reading. This is accomplished by the method of organizing the test content, by a profile chart, and by a Diagnostic Analysis of Learning Difficulties.

Such a test as this one is considerably different than the usual monthly or end-of-semester examination. It is a development of the past thirty-five years and is widely used both as a measure of student accomplishment in the subjects tested and as a means of determining the points needing review, remedial work, or special emphasis.

In the first place, tests of this type are carefully prepared by the analysis of courses of study, basic textbooks, and teaching materials suited to the grades for which the tests are designed. Ordinarily their content is not limited to the specific portions of subject matter which may be taught during a given month or term. Rather, they cover the basic elements in the subject-field in such a manner that they will indicate each student's ability to comprehend and solve the particular situations presented. Likewise they will disclose similar information for the class as a whole.

Following this analysis, the teacher has the information which enables him to fit better his instruction to the needs and individual differences shown by the students in his classes.

✓ Mark the number of each correct answer. You may look back to find the answers.

133. Standardized tests have existed about
1 ten years 2 thirty-five years 3 fifty years 2 133
134. Their preparation requires
1 a few hours 2 a few days 3 painstaking analysis 2 134

GO

RIGHT ON TO
THE NEXT PAGE

TEST 2 — SECTION G (Continued)

135. The subject matter of standardized tests is usually
¹ limited to semester assignments
² based on essentials
³ unrelated to school work 2 135
136. Standards are used to provide for
¹ comparisons ² samples
³ subjective evaluation 3 136
137. Standardized test questions usually have answers of which
¹ several may be correct
² only one is correct
³ none is correct 2 137
138. These tests should be helpful to the student because
¹ they may indicate his weak points
² they have been widely used
³ they are easily scored 1 138
139. These tests may be useful to the teacher because they are
¹ easily scored ² representative
³ diagnostic 3 139
140. Because of individual differences, each teacher may expect variations in
¹ questions per page
² educational needs of students
³ scoring time required per paper 2 140

GO

RIGHT ON TO THE
NEXT SELECTION

✓ Read the following statement:

During the present century, scientific study of man's surroundings and experiences is commonly accepted as the desirable way to determine the truth or falsity of statements, opinions, or beliefs.

This was not always so. During past centuries there was much reliance on authority. The expressed opinion of individuals and the written statements in approved documents have frequently been accepted and taught as oracles of truth. Those questioning the accuracy or validity of these opinions were in grave danger. Many per-

sons later recognized as leading contributors to the progress of mankind have suffered torture, imprisonment, and death because they dared to question beliefs or opinions which are demonstrably false.

Scientific method differs from authority primarily in that it emphasizes the inductive rather than the deductive approach to the solution of problems. Inductive method is characterized by observation, measurement, definition, enumeration, classification, and the formulation of conclusions on the basis of objective evidence. On the other hand, authority utilizes the deductive method, namely, reasoning from a major premise to a conclusion, without, of course, necessarily expressing all the elements involved in the final statement or opinion.

In one sense authority and scientific method may be harmonized. It is conceivable that the major premises of authority may be based on scientific studies which have produced demonstrable truths. Deductions made with these truths as major premises and with strict adherence to the principles of logic should be valid.

✓ Mark the number of each correct answer. You may look back to find the answers.

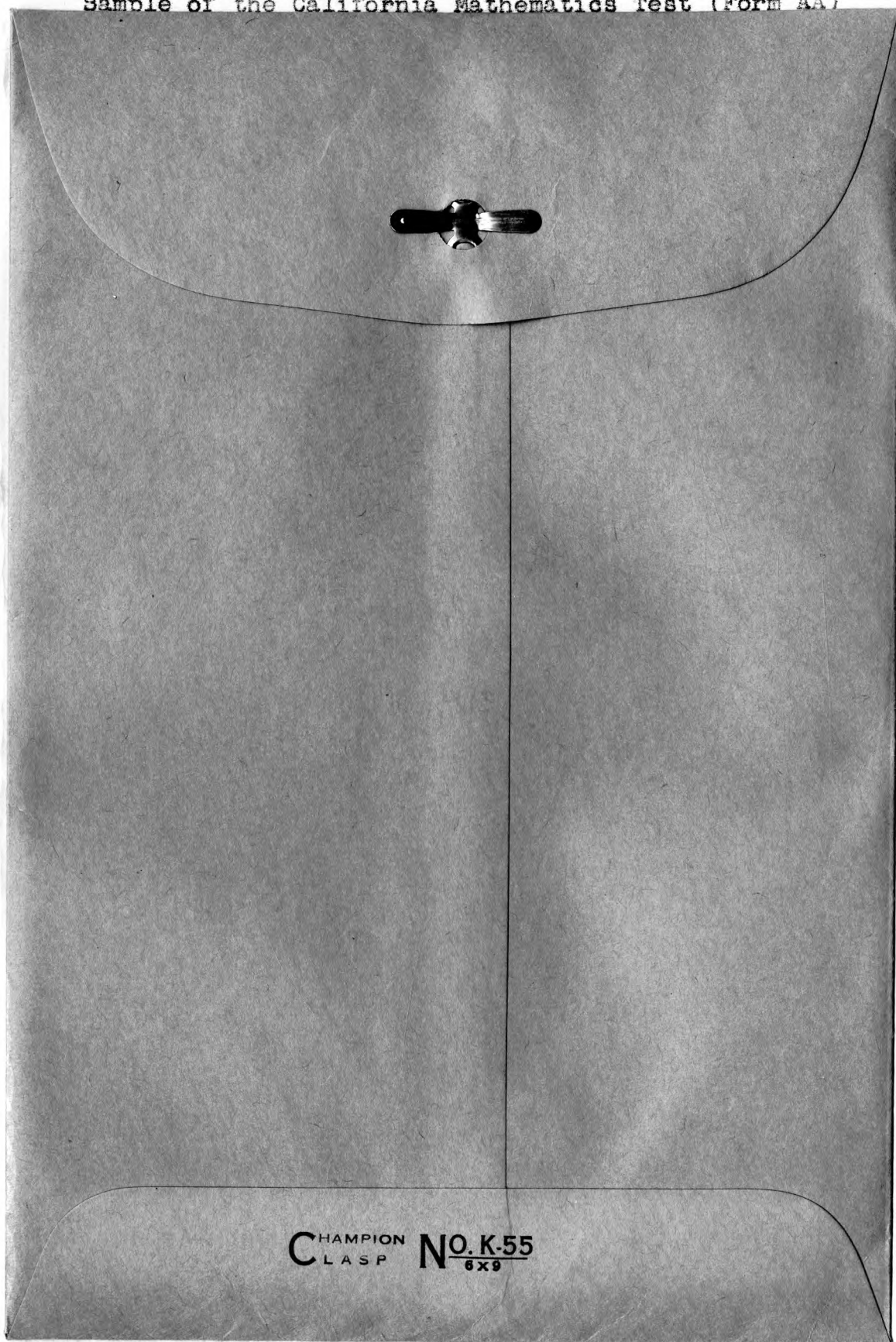
141. Scientific method has been encouraged
¹ for many centuries ² recently
³ continuously 2 141
142. "Authority" as used in the above paragraphs means
¹ expert ² scientific
³ assumed truths 3 142
143. Scientists emphasize the use of the following method
¹ inductive ² deductive
³ rational 1 143
144. Deductive reasoning assumes the accuracy of
¹ conclusions ² major premises
³ facts 2 144
145. The conclusions of science and authority may be
¹ reconciled ² irrelevant
³ persecuted 1 145

STOP

NOW WAIT FOR
FURTHER INSTRUCTIONS

Sec. G Score
(number right) 26

Sample of the California Mathematics Test (Form AA)



C^{HAMPION}
LASP **N**O. K-55
6x9

Arithmetic

INSTRUCTIONS TO STUDENTS:

This is an arithmetic test. In taking it you will show how well you can think and work problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

Do not write, mark, or figure on this test booklet unless told to do so by the examiner.

DIRECTIONS: Decide how each of the amounts below should be written as a number. Then mark as you are told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think that none of the answers given is correct, mark the letter, e. In doing this test you should finish the first column before doing the second. Look at the samples to the right and see how they are marked.

Sample A: Twelve

a 10
b 12
c 11
d 2
e None

Correct Answer Sheet Mark				
a	b	c	d	e
A	I	I	I	I

Correct Test Booklet Mark	
b	A

Sample B: Twenty

a 22
b 200
c 2
d 21
e None

Correct Answer Sheet Mark				
a	b	c	d	e
B	I	I	I	I

Correct Test Booklet Mark	
e	B

TEST 3 — SECTION A

- Four thousand fifteen
a 415,000
b 4,150
c 4,015
d 400,015
e None
c
(1)
- Eighteen thousand four
a 18,040
b 180,040
c 1,804
d 18,000,4
e None
c
(2)
- One million one hundred one
a 1,101,000
b 1,100,001
c 1,101
d 1,000,101
e None
c
(3)
- Eighty-four dollars and five cents
a \$84.5¢
b \$84.05
c \$84.50
d 84.05
e None
b
(4)
- Sixteen and two-thirds
a $16\frac{2}{3}$
b $1\frac{2}{3}$
c $6\frac{2}{3}$
d $1\frac{1}{2}$
e None
a
(5)
- Three hundredths
a .300
b 3.00
c .03
d .003
e None
c
(6)
- Forty-two ten-thousandths
a 42,010,000
b .042
c .0042
d .00042
e None
c
(7)

✓ Read these Roman numerals. Then mark as you have been told the letter of each correct answer.

8. XL means

a 20 b 40 c 60 d 80 e None a
(8)

9. DC means

a 300 b 400 c 600 d 900 e None c
(9)

10. MCCXII means

a 512 b 712 c 802 d 1212 e None c
(10)

✓ Find the largest number or quantity, marked a, b, c, or d, in each of the following rows. Then mark its letter or number.

11. a $\frac{2}{3}$ b $\frac{5}{8}$ c $\frac{3}{4}$ d $\frac{4}{9}$ c 11

12. a .059 b .25 c .189 d .0689 b 12

13. a 2 b 50% c .42 d 1.19 a 13

14. a 3^2 b 2^3 c 7 d 1^{10} a 14

15. a $(\frac{3}{4})^2$ b $\frac{3}{4}$ c $(\frac{1}{2})^2$ d $(\frac{1}{2})^3$ d 15

16. a $\sqrt{.64}$ b .84 c $\sqrt{.81}$ d .786 b 16

17. a $.7^3$ b $.7^2$ c .4 d $.6^4$ d 17

(Consider all algebraic quantities to be positive and that $a + b$ is greater than 1.)

18. $^1 a^2$ $^2 a^2 - 1$ $^3 \frac{a^3 - a}{a}$ $^4 a \times a - 2$ 1 18

19. $^1 \frac{4a^2 - b}{a}$ $^2 3a - b$ $^3 4a$ $^4 \frac{6a^2 - 2b^2}{2a}$ 4a 19

20. $^1 (a + b)^2$ $^2 (a - b)^2$ $^3 (a + b)(a - b)$ $^4 a^2$ 1 20

STOP

Sec. A Score (number right) 13

DIRECTIONS: Mark the letter or number of each correct answer. If you do not know an answer, or you think that none of the answers given is correct, you should mark the letter, e, or the number, 5, whichever appears before the word, None. Finish the first column before doing the second. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 3 — SECTION B

21. $\sqrt{49}$ is	a 149 b 1 c 9 d 49 e None	<u>e</u> (21)	26. What is the greatest common divisor of 5, 15, and 35?	a 15 b 3 c 5 d 55 e None	<u>c</u> (26)
22. 5% of 40 = 40 5 2.00	a 8 b 20 c 45 d 2 e None	<u>d</u> (22)	27. What is the greatest common divisor of $2a^2 - 2ab$, $4ab$, and $4a^2b^2$?	a $2a^2$ b $4a$ c $2ab$ d $2a$ e None	<u>d</u> (27)
23. Reduce to simplest terms: $\frac{36}{2} = 18$ $\frac{12}{4} = 3$	a 6 b $1\frac{8}{3}$ c $\frac{1}{6}$ d $\frac{3}{18}$ e None	<u>a</u> (23)	28. \therefore means	1 triangle 2 therefore 3 to prove 4 equivalent 5 None	<u>4</u> (28)
24. Which two numbers are both factors of 6?	a 4, 2 b 5, 1 c 2, 3 d 6, 0 e None	<u>c</u> (24)	29. $^{\circ}$ means	1 centigrade 2 degree 3 less than 4 reduce 5 None	<u>2</u> (29)
25. Which two quantities are both factors of $a^2 + 2ab + b^2$?	1 $(a+b)(a+b)$ 2 $(a+b)(a-b)$ 3 $(2a+b)(a+b)$ 4 $(a^2b^2)(2ab)$ 5 None	<u>e</u> (25)	30. π means	1 factor 2 dram 3 pi 4 radius 5 None	<u>3</u> (30)

DIRECTIONS: Some rules used in measurement, numbered 1, 2, 3, 4, 5, and 6, are given to the right below. Some problems that can be worked with these rules are given on the left, numbered 31, 32, 33, 34, and 35. Mark the number of the rule on the right which is used to find the answer to each problem on the left.

Problems	Rule	Rules Used in Measurement
31. Length of a rectangle	<u>4</u> 31	1. Multiply width by length. 2. Multiply $\frac{1}{2}$ base by altitude. 3. Multiply $\frac{1}{3}$ area of base by altitude. 4. Divide area by width. 5. Multiply diameter by 3.1416 or $3\frac{1}{7}$. 6. Multiply length by width by height.
32. Volume of a rectangular prism	<u>6</u> 32	
33. Area of a rectangle	<u>1</u> 33	
34. Circumference of a circle	<u>5</u> 34	
35. Area of a triangle	<u>2</u> 35	

DIRECTIONS: Work these problems. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think that none of the answers given is correct, you should mark the letter, e. Finish the first column before doing the second. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 3 — SECTION C

36. Add:
$$\begin{array}{r} 62 \\ -32 \\ 34 \\ \hline \end{array}$$

$$\begin{array}{r} +96 \\ -32 \\ +64 \\ \hline \end{array}$$

a 96
b 64
c 128
d —94
e None c
(36)

41. $x + 3 = 9$
 $x = 9 - 3$
 $x = 6$

a 12
b 3
c 9
d 27
e None c
(41)

37. Subtract:
$$\begin{array}{r} 64b \\ 12b \\ \hline \end{array}$$

$$\begin{array}{r} 52b \\ \hline \end{array}$$

a $76b^2$
b $76b$
c $52b$
d $768b^2$
e None c
(37)

42. $x^2 = 36$
 $x = 6$

a $36x^2$
b 18
c $1296x$
d 6
e None d
(42)

38. Multiply:
$$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ \hline \end{array}$$

a 1
b 11
c 30
d —30
e None d
(38)

43. $\frac{x}{3} = 4$
 $x = 4 \cdot 3$
 $x = 12$

a 12
b 7
c $\frac{4}{3}$
d $\frac{3}{4}$
e None a
(43)

39. Simplify:
$$\frac{-24}{6}$$

$$\frac{-4}{124}$$

a —4
b $-\frac{2}{3}$
c 4
d —144
e None a
(39)

44. If $a = 4$, $b = 6$, and $c = 5$, find the value of x in the following equation:
$$x = \frac{4}{a} - b + \frac{5}{c}$$

$$x = \frac{4}{4} - 6 + \frac{5}{5} = 1 - 6 + 1 = -4$$

a 15
b —1
c —7
d 3
e None c
(44)

✓ Find the value of x in each of the following equations. Then mark its letter.

40. $4x = 32$
 $x = \frac{32}{4}$
 $x = 8$

a 128
b 28
c 8
d 36
e None c
(40)

45. If $m = 2$, $p = 4$, and $r = 3$, find the value of x in the following equation:
$$x = pr^2 - m^2$$

$$x = 12 - 2 \cdot 2 = 8$$

a $\frac{1}{2}$
b 10
c 20
d 24
e None c
(45)

STOP

NOW WAIT FOR FURTHER INSTRUCTIONS

DIRECTIONS: Work these problems. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 3 — SECTION D

46. How much money will be required to buy two loaves of bread at 10¢ a loaf and one dozen eggs at 65¢ a dozen?

$$\begin{array}{r} 20 \\ 65 \\ \hline 85 \end{array}$$

a 55¢
b 75¢
c 95¢
d 85¢
e None

d
(46)

47. How much money will be required to buy $\frac{3}{4}$ lb. of butter at 60¢ a pound, 4 lbs of sugar at 7¢ a pound, and 3 eggs at 64¢ a dozen?

$$\begin{array}{r} 45 \\ 28 \\ 216 \\ \hline 289 \end{array}$$

a 44¢
b 69¢
c 61¢
d 99¢
e None

e
(47)

48. In a "paper drive" four boys brought old paper to school as follows: Fred, 50 lbs.; Albert, 60 lbs.; Henry, 30 lbs.; and Peter, 60 lbs. What was the average number of pounds brought?

$$\begin{array}{r} 110 \\ 90 \\ \hline 200 \end{array} \quad \begin{array}{r} 50 \\ 41500 \end{array}$$

a 30
b 60
c 50
d 45
e None

c
(48)

49. What was the average wage per month of factory workers who were paid as follows:

$$\begin{array}{r} 10 \text{ received } \$180 \text{ per month} \\ 15 \text{ received } \$200 \text{ per month} \\ 5 \text{ received } \$220 \text{ per month} \\ 1 \text{ received } \$300 \text{ per month} \\ \hline 31 \end{array}$$

a \$200
b \$225
c \$180
d \$220
e None

b
(49)

50. A rectangular athletic field is 100 yards wide and 500 yards long. How many square yards in the field?

a 5000
b 50,000
c 600
d 400
e None

a
(50)

51. A swimming tank is 15 feet wide, 50 feet long, and has an average depth of 5 feet. How many cubic feet of water will it hold?

$$\begin{array}{r} 50 \\ 15 \\ \hline 750 \end{array} \quad \begin{array}{r} 50 \\ 3750 \end{array}$$

a 70
b 750
c 250
d 3750
e None

d
(51)

52. When the scale on a map is " $\frac{1}{4}$ in. = 30 mi.," how many miles apart are two cities that are represented on a map as 2 in. apart?

$$\begin{array}{r} 30 \\ 4 \\ \hline 120 \end{array}$$

a 120
b 60
c 240
d 15
e None

a
(52)

53. Frank, Henry, and Roy together received \$40.00. Frank received \$8.00, Henry received \$12.00, and Roy received \$20.00. What per cent of the \$40.00 did Henry receive?

$$\begin{array}{r} 30 \\ 40 \overline{)120} \\ \underline{120} \\ 0 \end{array}$$

a 30
b 20
c 50
d 10
e None

a
(53)

TEST 3 — SECTION D (Continued)

54. Ruth earned \$24.00 and saved \$6.00 of it. What per cent did she save?

$$\begin{array}{r} 24 \overline{) 6.00} \\ \underline{48} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

a 20
b 400
c 25
d $\frac{1}{4}$
e None

c
(54)

55. A man received six per cent interest on a loan of \$500 for one year. How much interest did he receive?

$$\begin{array}{r} 500 \\ \times .06 \\ \hline 30.00 \end{array}$$

a \$30.00
b \$3.00
c \$300.00
d \$83.33 $\frac{1}{3}$
e None

a
(55)

56. Our basketball team won 60 per cent of the games played, but lost 8 games. How many games did they play altogether?

$$\begin{array}{l} 60\% \text{ won} \\ 30\% \text{ lost} \\ \text{lost } 8 = 40\% \\ 30 \end{array}$$

a 10
b 16
c 12
d 20
e None

e
(56)

57. Some families spend their monthly incomes according to budget plans, two of which are given to the right. Using these plans as a basis, about how much would a family with a monthly income of \$275 spend for food?

	\$225 monthly income	\$275 monthly income
Shelter	20%	17%
Food	26	25
Clothing	15	15
Operation	6	7
Savings	13	16
Other Expenses	20	20
	<u>100%</u>	<u>100%</u>

a \$68.75
b \$112.50
c \$60.00
d \$32.00
e None

a
(57)

58. A merchant sold shoes for \$5.00 which cost him \$3.75 a pair. Thus he received a gross profit of \$1.25, or 25% on the selling price. By what per cent was the cost price increased to provide for this 25% profit on the selling price?

a 125
b $\frac{1}{3}$
c 25
d $33\frac{1}{3}$
e None

c
(58)

59. A house, valued at \$8000, was insured for 80% of its value. The rate of insurance was 24 cents per \$100. What was the amount of the premium?

$$\begin{array}{r} 8,000 \\ \times .80 \\ \hline 640.00 \end{array}$$

a \$6400.00
b \$15.36
c \$1536.00
d \$256.00
e None

c
(59)

60. Mary's father owns a furniture store. He wished to purchase a dining room set at a list price of \$150.00. One wholesale dealer offered a discount of 25%, and another offered discounts of 20% and 10%. How much more will Mary's father save by taking the better discount?

a \$15.00
b \$12.00
c \$7.50
d \$4.50
e None

c
(60)

$$\begin{array}{r} 150 \\ \times .25 \\ \hline 37.50 \end{array}$$

STOP

NOW WAIT FOR
FURTHER INSTRUCTIONS

Sec. D Score
(number right) 9

DIRECTIONS: Do these problems in addition. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

TEST 4 — SECTION E

<p>(61)</p> $\begin{array}{r} 205 \\ + 340 \\ \hline 545 \end{array}$ <p>a 565 b —165 c 69700 d 545 e None</p> <p style="text-align: right;"><u>d</u> (61)</p>	<p>(68)</p> $\begin{array}{r} \frac{1}{3} \\ + \frac{1}{6} \\ \hline \frac{1}{2} \end{array}$ <p>a $\frac{4}{6}$ b $\frac{1}{2}$ c $\frac{1}{6}$ d $\frac{1}{18}$ e None</p> <p style="text-align: right;"><u>b</u> (68)</p>	<p>(75)</p> $16\frac{5}{8} + 13.05 =$ <p>a 29.675 b 3.575 c 29.555</p> <p>d 3.455 e None</p> <p style="text-align: right;"><u>a</u> (75)</p>
<p>(62)</p> $\begin{array}{r} 31 \\ + 15 \\ \hline 46 \end{array}$ <p>a 26 b 16 c 56 d 465 e None</p> <p style="text-align: right;"><u>c</u> (62)</p>	<p>(69)</p> $\begin{array}{r} 14 \\ + 4\frac{3}{4} \\ \hline 18\frac{3}{4} \end{array}$ <p>a $9\frac{1}{4}$ b $59\frac{1}{2}$ c $18\frac{3}{4}$ d $10\frac{1}{4}$ e None</p> <p style="text-align: right;"><u>c</u> (69)</p>	<p>(76)</p> $.06 + .148 + .2166 =$ <p>a 23.20 b .2320 c .3146</p> <p>d .4246 e None</p> <p style="text-align: right;"><u>d</u> (76)</p>
<p>(63)</p> $\begin{array}{r} 4272 \\ 5468 \\ 1845 \\ + 1402 \\ \hline 12987 \end{array}$ <p>a 11877 b 12887 c 12987 d 11887 e None</p> <p style="text-align: right;"><u>c</u> (63)</p>	<p>(70)</p> $\begin{array}{r} \frac{1}{4} \\ + 3\frac{3}{8} \\ \hline 3\frac{7}{8} \end{array}$ <p>a $3\frac{5}{8}$ b $3\frac{1}{8}$ c $3\frac{3}{32}$ d $1\frac{5}{8}$ e None</p> <p style="text-align: right;"><u>a</u> (70)</p>	<p>(77)</p> $42.3 + 6.23 + .0429 + 4 =$ <p>a 1.4889 b 52.5729 c 5.0889</p> <p>d 48.9729 e None</p> <p style="text-align: right;"><u>b</u> (77)</p>
<p>(64)</p> $\begin{array}{r} \$65.35 \\ 3.69 \\ 42.74 \\ + 8.16 \\ \hline \$119.94 \end{array}$ <p>a \$108.94 b \$118.75 c \$108.74 d \$119.94 e None</p> <p style="text-align: right;"><u>d</u> (64)</p>	<p>(71)</p> $\begin{array}{r} 18\frac{1}{3} \\ + 4\frac{1}{5} \\ \hline 22\frac{8}{15} \end{array}$ <p>a $14\frac{1}{5}$ b $72\frac{1}{5}$ c $22\frac{8}{15}$ d $4\frac{1}{2}$ e None</p> <p style="text-align: right;"><u>c</u> (71)</p>	<p>(78)</p> $20\% \text{ of } 30 + 10\% \text{ of } 70 =$ <p>a —1 b $8\frac{1}{2}$ c 1</p> <p>d 13 e None</p> <p style="text-align: right;"><u>d</u> (78)</p>
<p>(65)</p> $\begin{array}{r} 4 \text{ yd. } 2 \text{ ft. } 7 \text{ in.} \\ + 2 \text{ yd. } 1 \text{ ft. } 6 \text{ in.} \\ \hline 7 \text{ yd. } 1 \text{ ft. } 1 \text{ in.} \end{array}$ <p>a 2 yd. 1 ft. 1 in. b 6 yd. 3 ft. 13 in. c 7 yd. 1 ft. 1 in. d 7 yd. 11 in. e None</p> <p style="text-align: right;"><u>c</u> (65)</p>	<p>(72)</p> $\begin{array}{r} 8\frac{1}{4} \\ + 3\frac{5}{6} \\ \hline 12\frac{1}{2} \end{array}$ <p>a $11\frac{1}{10}$ b $11\frac{11}{13}$ c $5\frac{7}{12}$ d $12\frac{1}{12}$ e None</p> <p style="text-align: right;"><u>d</u> (72)</p>	<p>(79)</p> $4a + 2a + 3a =$ <p>a $9a^2$ b $9a^3$ c $9a$</p> <p>d $24a$ e None</p> <p style="text-align: right;"><u>c</u> (79)</p>
<p>(66)</p> $\$30.00 + \$25 + \$5 + \$1.25 =$ <p>a \$61.25 b \$56.75 c \$36.40</p> <p>d \$36.50 e None</p> <p style="text-align: right;"><u>d</u> (66)</p>	<p>(73)</p> $\begin{array}{r} 73\frac{1}{2} \\ 22\frac{2}{3} \\ + 34\frac{3}{4} \\ \hline 130\frac{1}{12} \end{array}$ <p>a $96\frac{1}{6}$ b $129\frac{11}{12}$ c $130\frac{11}{12}$ d $62\frac{1}{12}$ e None</p> <p style="text-align: right;"><u>c</u> (73)</p>	<p>(80)</p> $x^2 + 8x + 2(3x^2 - x) =$ <p>a $x^2 + 8x + 6x^2 - 2x$ b $7x^2 + 6x$ c $7x^2 + 8x - 2x$ d $7x^4 + 6x^2$ e None</p> <p style="text-align: right;"><u>e</u> (80)</p>
<p>(67)</p> $\begin{array}{r} \frac{1}{3} \\ + \frac{1}{3} \\ \hline \frac{2}{3} \end{array}$ <p>a $\frac{1}{6}$ b $\frac{1}{9}$ c $\frac{2}{3}$ d $\frac{2}{6}$ e None</p> <p style="text-align: right;"><u>c</u> (67)</p>	<p>(74)</p> $7\frac{1}{2} + 8.5 =$ <p>a $15\frac{1}{2}$ b 16 c $92\frac{1}{2}$ d 15.55 e None</p> <p style="text-align: right;"><u>b</u> (74)</p>	<p style="text-align: center;">STOP NOW WAIT FOR FURTHER INSTRUCTIONS</p>

DIRECTIONS: Do these problems in subtraction. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms.

TEST 4 — SECTION F

<p>(81)</p> $\begin{array}{r} 584 \\ -322 \\ \hline 262 \end{array}$ <p>a 162 b 906 c 188048 d —906 e None</p> <p style="text-align: right;"><u>e</u> (81)</p>	<p>(88)</p> $\begin{array}{r} \frac{2}{3} \\ -\frac{1}{3} \\ \hline \frac{1}{3} \end{array}$ <p>a 1 b —1 c $\frac{1}{3}$ d $-\frac{1}{3}$ e None</p> <p style="text-align: right;"><u>e</u> (88)</p>	<p>(95)</p> $76\frac{3}{5} - 16.11 = \frac{76.60}{60.49}$ <p>a 92.71 b —1233.966 c 60.11% d 60.49 e None</p> <p style="text-align: right;"><u>d</u> (95)</p>
<p>(82)</p> $\begin{array}{r} 83 \\ -27 \\ \hline 56 \end{array}$ <p>a 66 b 110 c 56 d 2241 e None</p> <p style="text-align: right;"><u>c</u> (82)</p>	<p>(89)</p> $\begin{array}{r} \frac{3}{4} \\ -\frac{1}{8} \\ \hline \frac{5}{8} \end{array}$ <p>a $\frac{7}{8}$ b $1\frac{1}{16}$ c $2\frac{1}{32}$ d $\frac{5}{8}$ e None</p> <p style="text-align: right;"><u>d</u> (89)</p>	<p>(96)</p> $74.260 - 21.16 = \frac{53.100}{53.100}$ <p>a 53.1 b .72044 c 95.42 d 1571.2416 e None</p> <p style="text-align: right;"><u>a</u> (96)</p>
<p>(83)</p> $\begin{array}{r} 8607 \\ -3938 \\ \hline 4669 \end{array}$ <p>a 12545 b 4669 c 5779 d 33894366 e None</p> <p style="text-align: right;"><u>b</u> (83)</p>	<p>(90)</p> $\begin{array}{r} \frac{5}{6} \\ -\frac{1}{4} \\ \hline \frac{7}{12} \end{array}$ <p>a $1\frac{1}{24}$ b $1\frac{1}{12}$ c $\frac{7}{12}$ d $1\frac{1}{24}$ e None</p> <p style="text-align: right;"><u>c</u> (90)</p>	<p>(97)</p> $87.49 - 6.4485 = \frac{81.0415}{81.0415}$ <p>a 93.9385 b 2.3015 c 15.1975 d 81.0415 e None</p> <p style="text-align: right;"><u>d</u> (97)</p>
<p>(84)</p> $\begin{array}{r} \$16.25 \\ -2.45 \\ \hline 13.80 \end{array}$ <p>a \$18.60 b \$14.80 c \$18.70 d \$13.80 e None</p> <p style="text-align: right;"><u>d</u> (84)</p>	<p>(91)</p> $\begin{array}{r} 9\frac{4}{7} \\ -5 \\ \hline 4\frac{4}{7} \end{array}$ <p>a $4\frac{4}{7}$ b $14\frac{4}{7}$ c $47\frac{6}{7}$ d $3\frac{4}{7}$ e None</p> <p style="text-align: right;"><u>a</u> (91)</p>	<p>(98)</p> $\frac{1}{6} \text{ of } 30 = 5, \frac{1}{3} \text{ of } 9 = 3$ <p>a 15 b 8 c 2 d $1\frac{2}{3}$ e None</p> <p style="text-align: right;"><u>c</u> (98)</p>
<p>(85)</p> $\begin{array}{r} \$200.00 \\ -14.25 \\ \hline \$185.75 \end{array}$ <p>a \$185.75 b \$196.85 c \$186.75 d \$214.25 e None</p> <p style="text-align: right;"><u>a</u> (85)</p>	<p>(92)</p> $\begin{array}{r} 6 \\ -3\frac{2}{3} \\ \hline 2\frac{1}{3} \end{array}$ <p>a 22 b $3\frac{2}{3}$ c $9\frac{2}{3}$ d $2\frac{2}{3}$ e None</p> <p style="text-align: right;"><u>d</u> (92)</p>	<p>(99)</p> $4a - a - 2a =$ <p>a $4a^2 - 2a$ b a c 7a d $7a^3$ e None</p> <p style="text-align: right;"><u>b</u> (99)</p>
<p>(86)</p> $\begin{array}{r} 7 \text{ da. } 8 \text{ hr. } 20 \text{ min.} \\ -4 \text{ da. } 10 \text{ hr. } 30 \text{ min.} \\ \hline 2 \text{ da. } 21 \text{ hr. } 50 \text{ min.} \end{array}$ <p>a 6 da. 31 hr. 80 min. b 11 da. 8 hr. 50 min. c 3 da. 2 hr. 10 min. d 2 da. 21 hr. 50 min. e None</p> <p style="text-align: right;"><u>d</u> (86)</p>	<p>(93)</p> $\begin{array}{r} 44\frac{9}{8} \\ -12\frac{5}{8} \\ \hline 31\frac{1}{2} \end{array}$ <p>a $56\frac{3}{4}$ b $32\frac{1}{2}$ c $31\frac{1}{2}$ d $528\frac{3}{4}$ e None</p> <p style="text-align: right;"><u>c</u> (93)</p>	<p>(100)</p> $4x^3 - 3x - (x^3 + 2x) =$ <p>a $3x^3 - 5x$ b $4x^3 - 3x - x^3 - 2x$ c $x^3 - x$ d $5x^3 - x$ e None</p> <p style="text-align: right;"><u>e</u> (100)</p>
<p>(87)</p> $\begin{array}{r} \frac{1}{4} \\ -\frac{1}{4} \\ \hline 0 \end{array}$ <p>a $\frac{1}{16}$ b 0 c $\frac{1}{2}$ d $\frac{3}{4}$ e None</p> <p style="text-align: right;"><u>b</u> (87)</p>	<p>(94)</p> $34.75 - 8\frac{1}{4} = \frac{26.5}{26.5}$ <p>a 26.5 b 43 c $26.25\frac{1}{4}$ d —286.6875 e None</p> <p style="text-align: right;"><u>a</u> (94)</p>	<p style="text-align: center;">STOP NOW WAIT FOR FURTHER INSTRUCTIONS</p>

DIRECTIONS: Do these problems in multiplication. Then mark as you have been told the letter of each correct answer. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms.

TEST 4 — SECTION G

<p>(101)</p> $\begin{array}{r} 423 \\ \times 7 \\ \hline 2961 \end{array}$ <p>a 416 b 430 c 2961 d $60\frac{3}{4}$ e None</p> <p style="text-align: right;"><u>c</u> (101)</p>	<p>(108)</p> $\frac{1}{5} \times \frac{1}{5} =$ <p>a $\frac{1}{25}$ d $\frac{2}{5}$ b $\frac{1}{5}$ e None c $\frac{2}{10}$</p> <p style="text-align: right;"><u>a</u> (108)</p>	<p>(115)</p> $\begin{array}{r} 45.85 \\ \times 4.2 \\ \hline 9170 \\ 18340 \\ \hline 192.570 \end{array}$ <p>a 50.05 b 41.65 c $45.80\frac{4}{5}$ d 192.57 e None</p> <p style="text-align: right;"><u>d</u> (115)</p>
<p>(102)</p> $\begin{array}{r} 803 \\ \times 6 \\ \hline 4818 \end{array}$ <p>a 797 b 4818 c 809 d $133\frac{5}{6}$ e None</p> <p style="text-align: right;"><u>b</u> (102)</p>	<p>(109)</p> $\frac{1}{6} \times \frac{6}{7} =$ <p>a 7 d $\frac{1}{7}$ b $\frac{7}{13}$ e None c $\frac{7}{42}$</p> <p style="text-align: right;"><u>d</u> (109)</p>	<p>(116)</p> $\begin{array}{r} 432 \\ 497.4 \\ \times 5 \\ \hline 2487.0 \end{array}$ <p>a 2487 b 497.9 c 496.9 d 497.45 e None</p> <p style="text-align: right;"><u>a</u> (116)</p>
<p>(103)</p> $\begin{array}{r} 529 \\ \times 47 \\ \hline 3703 \\ 2116 \\ \hline 24863 \end{array}$ <p>a 576 b 482 c 24863 d $11\frac{12}{47}$ e None</p> <p style="text-align: right;"><u>c</u> (103)</p>	<p>(110)</p> $\frac{2}{3} \times \frac{6}{8} =$ <p>a $\frac{9}{24}$ d 5 b $\frac{1}{2}$ e None c $\frac{8}{11}$</p> <p style="text-align: right;"><u>b</u> (110)</p>	<p>(117)</p> $\begin{array}{r} 64.32 \\ \times .035 \\ \hline 122160 \\ 192960 \\ \hline 2.25120 \end{array}$ <p>a 64.67 b 2.2512 c 63.97 d $1.83\frac{27}{35}$ e None</p> <p style="text-align: right;"><u>b</u> (117)</p>
<p>(104)</p> $\begin{array}{r} 867 \\ \times 30 \\ \hline 26010 \end{array}$ <p>a 897 b 837 c $28\frac{27}{30}$ d 26010 e None</p> <p style="text-align: right;"><u>d</u> (104)</p>	<p>(111)</p> $\frac{8}{1} \times 3\frac{1}{4} =$ <p>a $11\frac{3}{4}$ d $.02\frac{2}{15}$ b $4\frac{1}{4}$ e None c 30</p> <p style="text-align: right;"><u>c</u> (111)</p>	<p>(118)</p> $6 \times 20\% \text{ of } 40 = 48$ <p>a 120 b 4.80 c 48 d 1.34 e None</p> <p style="text-align: right;"><u>c</u> (118)</p>
<p>(105)</p> $\begin{array}{r} 3048 \\ \times 306 \\ \hline 18288 \\ 91440 \\ \hline 932688 \end{array}$ <p>a 932688 b 3354 c 2742 d $914\frac{7}{153}$ e None</p> <p style="text-align: right;"><u>a</u> (105)</p>	<p>(112)</p> $9\frac{3}{4} \times \frac{3}{5} =$ <p>a $9\frac{9}{9}$ d $51\frac{1}{20}$ b $9\frac{9}{20}$ e None c $9\frac{1}{20}$</p> <p style="text-align: right;"><u>d</u> (112)</p>	<p>(119)</p> $2a \times 3a = 6a$ <p>a 5a d $6a^2$ b $5a^2$ e None c —a</p> <p style="text-align: right;"><u>e</u> (119)</p>
<p>(106)</p> $\begin{array}{r} 3 \text{ yd. } 5 \text{ ft. } 6 \text{ in.} \\ \times 7 \\ \hline 33 \text{ yd. } 2 \text{ ft. } 6 \text{ in.} \end{array}$ <p>a 20 yd. 35 ft. 42 in. b 33 yd. 2 ft. 6 in. c 33 yd. 5 ft. 6 in. d 33 yd. 2 ft. $2\frac{1}{3}$ in. e None</p> <p style="text-align: right;"><u>b</u> (106)</p>	<p>(113)</p> $8\frac{4}{5} \times 4\frac{1}{5} =$ <p>a $34\frac{4}{5}$ d $12\frac{1}{4}$ b $34\frac{28}{35}$ e None c $4\frac{9}{35}$</p> <p style="text-align: right;"><u>a</u> (113)</p>	<p>(120)</p> $(x^2 + y)(x - y) =$ <p>a $x^3 - x^2y + xy - y^2$ b x c $x + y - y$ d x^3 e None</p> <p style="text-align: right;"><u>a</u> (120)</p>
<p>(107)</p> $3 \times \frac{1}{3} = 1$ <p>a $\frac{3}{3}$ b $3\frac{1}{3}$ c 1 d $2\frac{2}{3}$ e None</p> <p style="text-align: right;"><u>c</u> (107)</p>	<p>(114)</p> $\begin{array}{r} 46\frac{2}{3} \\ \times 15 \\ \hline 230 \\ 460 \\ \hline 690 \end{array}$ <p>a $61\frac{2}{3}$ b $31\frac{2}{3}$ c 700 d $51\frac{2}{3}$ e None</p> <p style="text-align: right;"><u>c</u> (114)</p>	<p>(120)</p> <p style="text-align: right;"><u>a</u> (120)</p>

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

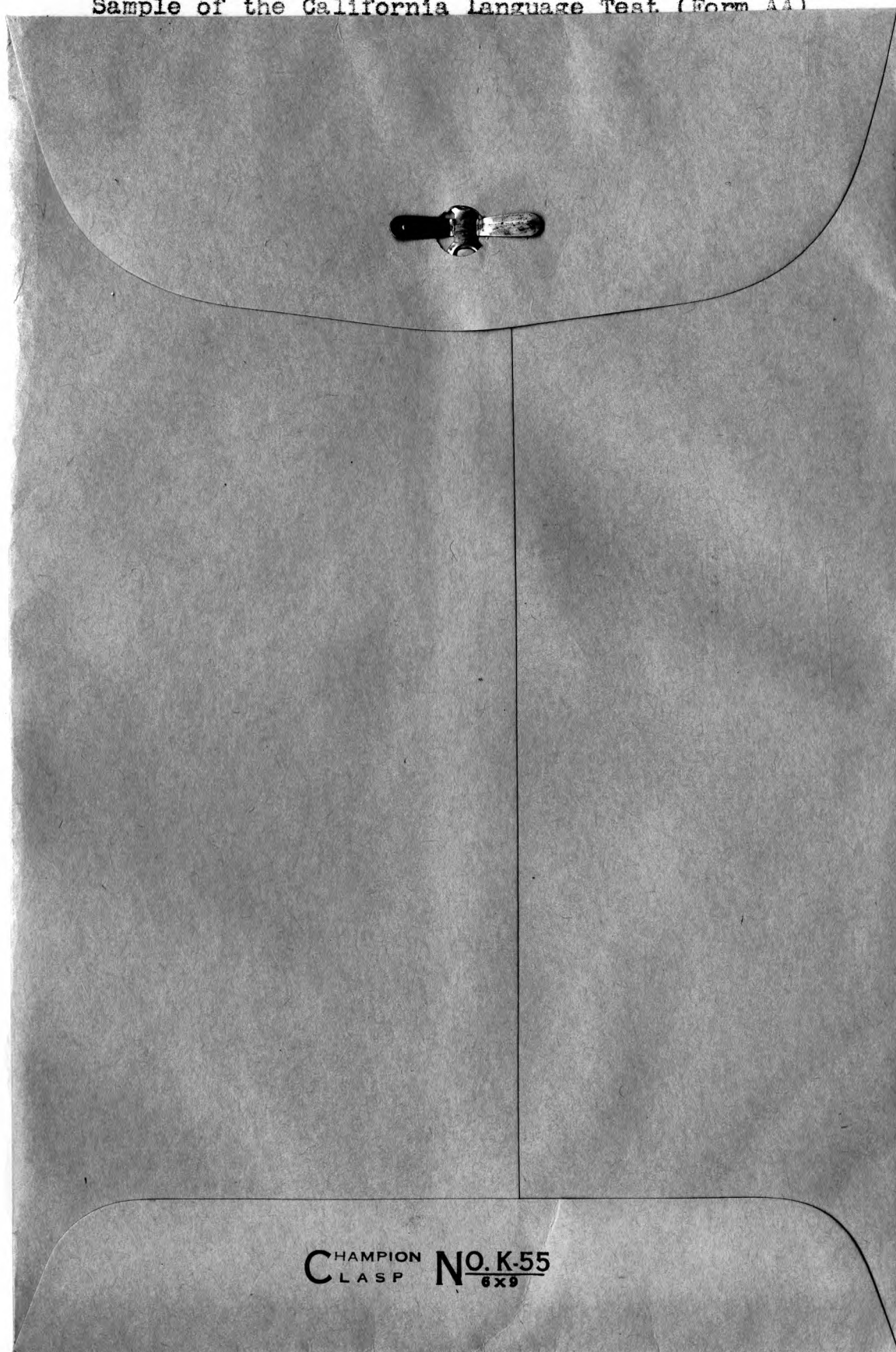
DIRECTIONS: Do these problems in division. Then mark as you have been told the letter of each correct answer. Finish each column before going on to the next. Be sure to express remainders as fractions and reduce fractions to lowest terms.

TEST 4 — SECTION H

<p>(121) $7 \overline{) 1070}$</p> <p>a 63 b 77 c 10 d 490 e None <u>c</u> (121)</p>	<p>(128) $9 \div \frac{3}{5} = 15$</p> <p>a 15 b $8\frac{2}{5}$ c $9\frac{3}{5}$ d $4\frac{5}{5}$ e None <u>a</u> (128)</p>	<p>(135) $.02 \overline{) 300}$</p> <p>a 3.00 b 300 c .30 d $\frac{2}{3}$ e None <u>b</u> (135)</p>
<p>(122) $6 \overline{) 10426}$</p> <p>a 632 b $104\frac{1}{3}$ c 620 d 3756 e None <u>b</u> (122)</p>	<p>(129) $\frac{1}{3} \div \frac{3}{3} = 1$</p> <p>a $\frac{2}{6}$ b $\frac{2}{3}$ c $\frac{1}{3}$ d 1 e None <u>d</u> (129)</p>	<p>(136) $3 \overline{) 267.01}$</p> <p>a .267 b 26.7 c 2.67 d 11.01 e None <u>c</u> (136)</p>
<p>(123) $44 \overline{) 17864}$</p> <p>a 17820 b 46 c 406 d 416 e None <u>c</u> (123)</p>	<p>(130) $\frac{5}{6} \div \frac{2}{3} = 2\frac{1}{2}$</p> <p>a $2\frac{1}{2}$ b $2\frac{3}{2}$ c $\frac{5}{18}$ d $1\frac{5}{9}$ e None <u>a</u> (130)</p>	<p>(137) $.03 \overline{) 267.01}$</p> <p>a 2.67 b .267 c .831 d 26.7 e None <u>d</u> (137)</p>
<p>(124) $200 \overline{) 60000}$</p> <p>a 300 b 3.0 c 1200000 d 30 e None <u>d</u> (124)</p>	<p>(131) $8\frac{1}{4} \div \frac{2}{3} = 14\frac{7}{8}$</p> <p>a $1\frac{1}{2}$ b $18\frac{3}{8}$ c $4\frac{6}{4}$ d $73\frac{1}{2}$ e None <u>b</u> (131)</p>	<p>(138) $\frac{1}{4}$ of 36 \div $\frac{1}{8}$ of 24 = 3</p> <p>a 3 b $\frac{1}{3}$ c 27 d 6 e None <u>a</u> (138)</p>
<p>(125) $72 \overline{) 5694}$</p> <p>a $79\frac{1}{2}$ b 5766 c 5622 d 409968 e None <u>a</u> (125)</p>	<p>(132) $5\frac{2}{3} \div 2\frac{1}{4} = \frac{68}{27}$</p> <p>a $7\frac{11}{12}$ b $12\frac{3}{4}$ c $2\frac{1}{27}$ d $6\frac{8}{34}$ e None <u>c</u> (132)</p>	<p>(139) $\frac{a^2 - a}{a} =$</p> <p>a $a^3 - a^2$ b $a - 1$ c 1 d $1a$ e None <u>c</u> (139)</p>
<p>(126) $\frac{1}{1} \div \frac{1}{4} = 4$</p> <p>a 4 b $\frac{1}{4}$ c $\frac{1}{16}$ d $1\frac{1}{4}$ e None <u>a</u> (126)</p>	<p>(133) $120 \div 1\frac{1}{2} = 80$</p> <p>a $121\frac{1}{2}$ b 180 c 8 d 80 e None <u>b</u> (133)</p>	<p>(140) $3x^3 - 3x^2y + xy - y^2 =$</p> <p>a $xy - y^2$ b $3x^3 - 3xy + xy - y$ c $3x^2 + y$ d $3x^4 - 3x^2y + xy - y^3$ e None <u>c</u> (140)</p>
<p>(127) $\frac{1}{3} \div \frac{3}{9} = 1$</p> <p>a 1 b $\frac{1}{9}$ c $3\frac{1}{3}$ d $\frac{1}{6}$ e None <u>b</u> (127)</p>	<p>(134) $4 \overline{) 123\frac{2}{3}}$</p> <p>a $30\frac{11}{12}$ b $31\frac{1}{12}$ c $30\frac{2}{3}$ d $127\frac{2}{3}$ e None <u>c</u> (134)</p>	

STOP NOW WAIT FOR FURTHER INSTRUCTIONS

Sample of the California Language Test. (Form AA)



C^{HAMPION}
L A S P **N**^{O.} **K-55**
6x9

Language

INSTRUCTIONS TO STUDENTS:

This is a language test. In taking it you will show what you know about capitalization, punctuation, and words and sentences, and how well you can spell and write. No one can do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

DIRECTIONS: In the sentences below the line, some of the letters with numbers above them should be capitals. Mark the number of each letter that should be a capital. Some lines may have more than one letter that should be a capital; others may have no such letter.

	Correct Test Booklet Mark		Correct Answer Sheet Mark
SAMPLE: A. ¹ His ^{2 3} name ⁴ is ⁵ sam and he's my friend.	3 A		A 1 2 3 4 5

In Sample A the number 3 letter, s, in sam, should be a capital. Notice how the 3 has been marked.

TEST 5 — SECTION A

- | | | | |
|--|--|-----|----|
| 1. ¹ James ² saw ³ the ⁴ game. ⁵ we won easily. | | 3 | 1 |
| 2. ¹ Later ² on ³ helen ⁴ asked ⁵ our friend | | 2 | 2 |
| 3. ¹ to ² secure ³ a ⁴ map ⁵ for the trip. | | | 3 |
| 4. ¹ In ² franklin's ³ time ⁴ philadelphia ⁵ was small. | | 1-3 | 4 |
| 5. ¹ Labor ² Day ³ comes ⁴ in ⁵ september and falls on a monday. | | 3-5 | 5 |
| 6. ¹ He ² speaks ³ english ⁴ with ⁵ great fluency. | | 2 | 6 |
| 7. ¹ <i>Treasure island</i> ^{2 3 4} is ⁵ a good book. | | 1 | 7 |
| 8. ¹ William ² asked, ³ "in ⁴ what ⁵ classrooms do | | 2 | 8 |
| 9. ¹ your ² German ³ and ⁴ science ⁵ classes meet?" | | | 9 |
| 10. ¹ <i>The merchant of Venice</i> ² is ³ a ⁴ play ⁵ by Shakespeare. | | 1 | 10 |
| 11. ¹ In the year 1814 ² Napoleon ³ the ⁴ Great ⁵ was imprisoned on | | | 11 |
| 12. ¹ the ² tiny ³ island ⁴ of ⁵ elba. | | 5 | 12 |
| 13. ¹ He ² attended ³ the ⁴ university ⁵ of Wisconsin in madison. | | 2-5 | 13 |
| 14. ¹ The ² senate ³ and ⁴ the ⁵ House constitute our Congress. | | 1 | 14 |
| 15. ¹ The ² captain ³ cried, ⁴ "don't ⁵ give up the ship!" | | 2 | 15 |

DIRECTIONS: In the story below the line, numbers 16, 17, 18, etc., indicate places where punctuation may or may not be needed. In the answer row which has the number used in the story, make a black mark within the pair of dotted lines under the punctuation needed. If none is needed, mark N. Use the same answer row to show all punctuation needed at any one number in the story. Mark both apostrophes and single quotes in the column next to the N's.

SAMPLE: B. Is₁ John coming₂ home₃

Correct Test Booklet
and Answer Sheet Mark

	,	?	"	'	N
1					N
2					N
3					N

No punctuation is needed at 1 after the word, is, in Sample B, so a mark has been made under the N in answer row 1. A mark under N in answer row 2 shows that punctuation is not needed at 2 in the sample. A mark under the ? in answer row 3 shows the punctuation needed at 3 in the sample.

TEST 5 — SECTION B

Last week, upon Ted's return₁₆ from his vacation₁₇ he visited₁₈ Jack, Henry, and Bill.

Jack said, "Will you tell₁₉ us about your trip₂₀" Ted answered,₂₁ We had a wonderful time except for one day." Continuing₂₂ Jack said, "We were in a rowboat.₂₃ Suddenly a storm blew up and our boat turned over.₂₄ I was in danger of drowning, but my father yelled₂₅ 'Don't fight,₂₆ and because I turned over on my back₂₇ I floated₂₈ until they saved me."

Jack's father said, "I was sorry₂₉ to yell,₃₀ Don't fight,' but I had₃₁ to make you hear. A storm₃₂s fury is always dangerous,₃₃ so aren₃₄t you glad₃₅ I yelled?"

	,	?	"	'	N
16					N
17					N
18					N
19					N
20					N
21					N
22					N
23					N
24					N
25					N
26					N
27					N
28					N
29					N
30					N
31					N
32					N
33					N
34					N
35					N

DIRECTIONS: In the following sentences, mark as you have been told the number of each correct word.

TEST 5 — SECTION C

36. (¹ Isn't ² Aren't) the baskets filled with flowers? 2³⁶
37. John (¹ eat ² ate) six apples yesterday. 2³⁷
38. The furred animals sought a place in which to (¹ lie ² lay) protected from the fierce winds. 1³⁸
39. The referee (¹ draw ² drew) the whistle from his pocket. 2³⁹
40. She read (¹ them ² those) books aloud to the children. 2⁴⁰
41. Give this to (¹ whomever ² whoever) you see first. 1⁴¹
42. My friend would (¹ have done ² have did) the work well. 1⁴²
43. Rain (¹ don't ² doesn't) fall all the year round in this country. 2⁴³
44. (¹ Who ² Whom) did you visit? 2⁴⁴
45. He is reported (¹ to be killed ² to have been killed.) 2⁴⁵
46. Everyone has studied (¹ their ² his) lessons. 2⁴⁶
47. I approve of (¹ his ² him) going. 1⁴⁷
48. How much (¹ do ² does) a set of dishes cost? 2⁴⁸
49. Last year he (¹ came up and said ² comes up and says), "Hello." 1⁴⁹
50. They (¹ have not yet heard ² did not yet hear) from Helen. 1⁵⁰

✓ For each statement given below that is a complete sentence, mark YES; for each that is not, mark NO.

51. When we approached the deserted farmhouse at night. YES NO⁵¹
52. While the pedestrians watched the bandit car disappearing around the corner. YES NO⁵²
53. The clothing lay in complete disorder in the hastily forsaken room. YES NO⁵³
54. After working strenuously at the assignment as the fatal moment approached. YES NO⁵⁴
55. Remembering the statement of our friends in our endeavor to overcome the difficulty. YES NO⁵⁵
56. The mountains resounded with peals of thunder which indicated the storm's fury. YES NO⁵⁶
57. In the ante-room with the prisoner impatiently awaiting the appearance of the jury in whose hands his destiny rested. YES NO⁵⁷
58. Having run the gauntlet and endeavored to save his friends who were not aware of their great danger. YES NO⁵⁸
59. To appreciate fully the efforts of those who have given lifelong service in the interest of science requires a far deeper insight into the methods of observation, the rechecking of results, and the recurrence of uncontrolled factors than most humans, interested in life's problems, possess. YES NO⁵⁹
60. When new subjects are presented without a satisfactory background of skill, knowledge, or experience so that the pupil must hope to succeed not by intelligent study and application but by rote memory, guesswork, or devices which deceive teachers as to the true state of affairs. YES NO⁶⁰

STOP

NOW WAIT FOR
FURTHER INSTRUCTIONS

DIRECTIONS: Read the following sentence. Then consider how each individual word in that sentence is used in order that you may classify it as a part of speech. Mark the number which shows the classification of each word. If you do not know an answer, or if you think that none of the answers given is correct, mark the number, 5.

(61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73)
 Meager furnishings and supplies immediately indicated to them that this family was now
 (74) (75) (76) (77)
 moving to better quarters.

TEST 5 — SECTION D

WORDS	PARTS OF SPEECH					
61. meager	1 noun	2 verb	3 adjective	4 adverb	5 None	<u>3</u> 61
62. furnishings	1 noun	2 verb	3 adjective	4 adverb	5 None	<u>1</u> 62
63. and	1 pronoun	2 adjective	3 conjunction	4 preposition	5 None	<u>3</u> 63
64. supplies	1 noun	2 verb	3 adjective	4 adverb	5 None	<u>1</u> 64
65. immediately	1 noun	2 adverb	3 adjective	4 verb	5 None	<u>2</u> 65
66. indicated	1 pronoun	2 adverb	3 conjunction	4 verb	5 None	<u>4</u> 66
67. to	1 preposition	2 adjective	3 adverb	4 noun	5 None	<u>1</u> 67
68. them	1 adjective	2 verb	3 pronoun	4 adverb	5 None	<u>3</u> 68
69. that	1 pronoun	2 adverb	3 conjunction	4 preposition	5 None	<u>3</u> 69
70. this	1 pronoun	2 adjective	3 adverb	4 conjunction	5 None	<u>2</u> 70
71. family	1 adjective	2 noun	3 adverb	4 verb	5 None	<u>2</u> 71
72. was	1 noun	2 verb	3 pronoun	4 adjective	5 None	<u>2</u> 72
73. now	1 noun	2 preposition	3 conjunction	4 adverb	5 None	<u>4</u> 73
74. moving	1 noun	2 pronoun	3 verb	4 adjective	5 None	<u>3</u> 74
75. to	1 pronoun	2 preposition	3 conjunction	4 adverb	5 None	<u>2</u> 75
76. better	1 noun	2 adjective	3 verb	4 adverb	5 None	<u>4</u> 76
77. quarters	1 adverb	2 verb	3 adjective	4 noun	5 None	<u>4</u> 77

DIRECTIONS: Read the following statements and mark the number of each correct answer. If you do not know an answer mark number 5.

TEST 5 — SECTION E

78. The possessive case of the pronoun "I" is
- ¹ me ² my or mine ³ he ⁴ she ⁵ None 2 78

79. The objective case of the pronoun "they" is
- ¹ his ² their ³ them ⁴ her ⁵ None 3 79

80. The superlative degree of "good" is
- ¹ better ² bad ³ best ⁴ worst ⁵ None 3 80

81. The past participle of "swim" is
- ¹ swimmer ² swum ³ swam ⁴ swimming ⁵ None 2 81

82. Degree is related to
- ¹ nouns ² adjectives ³ verbs ⁴ pronouns ⁵ None 2 82

83. Principal parts are related to
- ¹ nouns ² conjunctions ³ verbs ⁴ adverbs ⁵ None 3 83

84. An infinitive is a form of
- ¹ a noun ² a conjunction ³ a verb ⁴ an adjective ⁵ None 3 84

✓ Read the following sentence and then mark the number of each correct answer for items 85, 86, and 87.

Regarding your proposal, we need to know when you will arrive.

85. "We" is what part of the sentence?
- ¹ the subject ² the predicate ³ an object ⁴ a modifier ⁵ None 1 85

86. In the above sentence, "When you will arrive" is
- ¹ a participle ² a clause ³ the predicate ⁴ a phrase ⁵ None 2 86

87. "Regarding your proposal" is
- ¹ the subject ² the predicate ³ a phrase ⁴ a clause ⁵ None 3 87

✓ Read the sentences below and then mark the number of each correct answer for items 88, 89, and 90.

He visited his friends who live in the country.

88. The above sentence is
- ¹ simple ² complex ³ compound ⁴ imperative ⁵ None 2 88

They consider him to be a capable person and an asset to the company.

89. The above sentence is
- ¹ simple ² complex ³ compound ⁴ interrogative ⁵ None 1 89

James ran to first base and Henry walked up to the plate.

90. The above sentence is
- ¹ simple ² complex ³ compound ⁴ interrogative ⁵ None 3 90

STOP

NOW WAIT FOR FURTHER INSTRUCTIONS

DIRECTIONS: Each line in this test contains four spelling words and the word, None. These words are numbered 1, 2, 3, 4, and the None is numbered 5. In some of the lines, one word is misspelled. In others, no word is misspelled. If there is a misspelled word, mark its number. If no word is misspelled, mark the 5.

	Correct Test Booklet Mark					Correct Answer Sheet Mark				
	1	2	3	4	5	1	2	3	4	5
SAMPLE: C.	1 now	2 just	3 come	4 ron	5 None	C				
SAMPLE: D.	1 go	2 see	3 do	4 may	5 None	D				

TEST 6

91.	1 offense	2 reseipt	3 emphasis	4 deem	5 None	2	91
92.	1 approved	2 surprise	3 dreary	4 tractors	5 None	5	92
93.	1 muzeum	2 malice	3 comparative	4 principal	5 None	1	93
94.	1 successor	2 prinsiples	3 parole	4 recognition	5 None	2	94
95.	1 millinery	2 messenger	3 assignment	4 innacent	5 None	4	95
96.	1 federal	2 drama	3 bandit	4 proffesion	5 None	4	96
97.	1 apologize	2 herald	3 initeate	4 forfeit	5 None	3	97
98.	1 sensus	2 judgment	3 merit	4 liking	5 None	1	98
99.	1 mortal	2 postscript	3 differed	4 patriot	5 None	5	99
100.	1 wobbly	2 magnificent	3 eligible	4 fasilitate	5 None	4	100
101.	1 uncertain	2 wearhouse	3 linen	4 exciting	5 None	2	101
102.	1 proposal	2 tract	3 folkes	4 cucumbers	5 None	3	102
103.	1 pierce	2 scandal	3 recitation	4 elliminate	5 None	4	103
104.	1 conseption	2 spineless	3 obedient	4 together	5 None	1	104
105.	1 admiral	2 fragrant	3 crocheting	4 chemestry	5 None	4	105
106.	1 invalid	2 ocassional	3 bankrupt	4 ambassador	5 None	2	106
107.	1 apparently	2 squirrels	3 representative	4 irrigation	5 None	3	107
108.	1 salaries	2 regretting	3 confermation	4 phase	5 None	3	108
109.	1 sorority	2 rheumatic	3 requisition	4 procedure	5 None	3	109
110.	1 vomit	2 infinate	3 criticism	4 competitors	5 None	2	110
111.	1 existence	2 itimized	3 apricot	4 impede	5 None	2	111
112.	1 warranted	2 continous	3 epistle	4 voluntary	5 None	2	112
113.	1 possessed	2 whither	3 accounted	4 substantial	5 None	1	113
114.	1 fraternity	2 kindergarden	3 reckon	4 acutely	5 None	2	114
115.	1 undoubtedly	2 vouchers	3 duely	4 transferred	5 None	3	115
116.	1 facinating	2 unconscious	3 tonnage	4 tuberculosis	5 None	1	116
117.	1 voluntary	2 competent	3 fragrance	4 acquaintance	5 None	4	117
118.	1 commodity	2 declension	3 beneficial	4 antitoxin	5 None	3	118
119.	1 unanimous	2 cancelation	3 technical	4 strenuous	5 None	2	119
120.	1 abandon	2 expenditure	3 mercantile	4 greatful	5 None	4	120

Table 3. Raw scores of freshman class of school X on the California Achievement Tests (Form AA) by totals and Sub-tests.

Pupil	: :Total :test : : :	: :Subject :test : : :	: :Subject :test : : :	: :Subject :test : : :	: :Subject :test : : :	: :Subject :test : : :	: :Subject :test : : :
		:reading: :voc.	:reading: :compre- :hension:	:math. :reason- :ing	:funda- :mentals: :	:mech.: :of Eng.: :& gram.:	:spell- :ing
1	255	45	40	35	65	54	16
2	154	27	27	13	45	34	8
3	257	44	42	37	69	55	10
4	223	40	34	31	62	44	12
5	190	24	29	20	54	51	12
6	189	31	29	24	48	47	10
7	206	34	29	33	63	39	8
8	220	26	32	34	67	50	11
9	144	23	27	16	39	31	8
10	189	33	26	25	48	39	18
11	228	42	37	28	54	59	8
12	256	41	38	41	58	65	13
13	260	38	39	39	68	60	16
14	287	54	41	42	68	64	18
15	153	25	22	19	28	51	8
16	157	24	24	15	41	46	7
17	133	25	28	13	23	33	11
18	169	32	25	28	31	41	12
19	142	30	22	15	43	25	7
20	256	40	31	36	60	70	19
21	217	41	32	27	53	55	9
22	259	53	39	32	62	54	19
23	206	33	28	23	54	47	21
24	273	57	39	35	67	57	18
25	265	48	33	35	66	64	19
26	188	33	22	26	54	47	6
27	188	22	29	23	55	48	11
28	177	28	19	23	53	47	7
29	220	40	32	39	64	67	17
30	171	24	29	22	43	44	9
31	249	35	41	36	64	65	8
32	256	46	34	30	64	68	14
Totals							
	6,737	1,125	999	895	1,733	1,631	390

Table 4. Raw scores of sophomore class of school X on the California Achievement Tests (Form AA) by totals and sub-tests.

Pupil	Total :test	Subject :test :reading :voc.	Subject :test :reading :compre- :hension	Subject :test :math. :reason- :ing	Subject :test :funda- :mentals :	Subject :test :mech. :of Eng. :& gram.	Subject :test :spell- :ing
1	217	41	30	30	54	47	15
2	278	57	43	39	68	57	14
3	176	13	23	36	60	38	6
4	281	53	39	45	67	63	14
5	298	51	39	44	73	72	19
6	287	49	40	42	67	67	22
7	171	25	20	28	56	38	4
8	281	44	39	44	72	65	17
9	234	45	29	30	58	56	16
10	255	44	41	33	61	61	15
11	183	28	29	27	45	44	10
12	236	54	29	32	51	52	18
13	213	53	39	16	40	51	14
14	315	62	47	42	71	64	29
15	302	63	42	44	68	60	25
16	260	48	34	40	66	56	16
17	284	60	43	40	66	56	19
18	255	41	34	31	73	57	19
19	214	43	24	20	62	47	18
20	265	50	38	43	64	55	15
21	275	47	43	47	57	58	23
22	289	57	44	41	69	61	17
23	257	50	45	41	49	58	14
24	330	73	45	47	72	68	25
25	251	58	36	28	52	58	19
26	273	56	42	47	50	66	12
27	265	53	40	43	64	58	7
28	300	55	45	44	74	61	21
29	246	48	33	41	65	45	14
30	226	33	37	32	63	45	16
31	295	66	43	43	68	56	19
32	275	47	38	50	55	65	20
33	196	41	28	37	36	42	12
34	172	38	21	26	35	41	11
35	225	48	30	32	52	47	16
36	235	44	31	34	59	51	16
37	165	23	27	18	43	40	14
38	243	41	34	34	70	49	15
39	293	58	40	46	68	60	21
40	307	68	42	47	71	59	20

Table 4. (concl.)

Pupil	:Total	:Subject	:Subject	:Subject	:Subject	:Subject	:Subject
	:test	:test	:test	:test	:test	:test	:test
		:reading	:reading	:math.	:funda-	:mech.	:spell-
		:voc.	:compre-	:reason-	:mentals	:of Eng.	:ing
			:hension	:ing		:& gram.	
1	241	36	38	39	56	64	18
42	277	48	40	46	62	66	15
Totals							
	10,641	1,069	863	872	1,415	1,251	388

Table 5. Raw scores of junior class of school X on the California Achievement Tests (Form AA) by totals and Sub-tests.

Pupil	:Total :test : : :	:Subject: :test :reading: :voc. :	:Subject: :test :readomg: :compre- :hension:	:Subject: :test :math. :reason- :ing	:Subject: :test :funda- :mentals: :	:Subject: :test :mech. :of Eng.: :& gram.:	:Subject: :test :spell- :ing :
1	292	55	43	47	76	48	23
2	217	36	31	25	56	51	18
3	255	52	35	36	69	56	17
4	162	28	23	17	39	42	13
5	267	49	44	35	59	66	14
6	226	34	40	32	60	44	16
7	315	54	50	49	70	67	25
8	261	38	36	39	75	56	17
9	336	73	45	51	76	68	23
10	264	45	35	37	69	60	18
11	184	29	31	22	47	44	11
12	282	54	34	44	72	57	21
13	306	64	38	42	62	76	24
14	153	36	29	32	56	0	0
15	252	38	37	48	69	47	13
16	300	62	42	37	71	63	25
17	241	51	37	34	52	55	12
18	228	34	31	47	56	52	8
19	250	43	41	38	62	47	19
20	164	35	32	22	31	40	4
21	348	69	47	50	76	79	27
22	278	49	44	45	52	69	19
23	267	41	38	43	60	64	21
Totals							
	5,858	069	863	872	1,415	1,251	388

Table 6. Raw scores of senior class of school X on the California Achievement Tests (Form AA) by totals and sub-tests.

Pupil	:Total :test : : :	:Subject :test :reading: :voc. :	:Subject :test :reading: :compre- :hension:	:Subject :test :math. :reason- :ing	:Subject :test :funda- :mentals: :	:Subject :test :mech. :of Eng.: :& gram.:	:Subject :test :spell- :ing
1	323	71	49	50	77	58	18
2	275	53	40	34	69	60	19
3	221	39	42	22	50	51	17
4	193	30	32	23	48	56	4
5	212	33	33	27	60	46	13
6	200	33	27	22	58	48	12
7	280	58	43	40	58	61	20
8	319	68	47	49	69	60	26
9	277	49	38	42	68	57	23
10	272	45	35	49	72	56	15
11	288	67	42	35	55	67	22
12	268	48	42	48	70	51	9
13	270	59	38	38	59	52	24
14	242	55	40	24	53	57	13
15	228	37	34	34	54	61	8
16	243	35	36	30	67	60	15
17	240	36	36	30	58	56	24
18	282	53	42	43	63	63	18
19	299	55	42	40	67	66	29
20	225	46	32	30	52	47	18
21	297	55	47	42	63	67	23
22	185	20	25	34	51	49	6
23	340	78	49	46	76	64	27
24	313	52	42	45	80	69	25
25	312	64	43	49	73	65	18
26	197	38	36	20	36	52	15
27	251	37	38	32	64	54	26
28	329	68	48	49	70	72	22
29	253	48	32	30	71	56	16
30	210	44	31	29	44	48	14
31	176	24	24	27	54	41	6
32	240	61	42	28	44	50	15
33	215	29	27	36	60	48	15
34	221	28	33	35	71	44	10
35	312	62	44	46	76	66	18
36	286	63	40	40	65	56	22
37	224	49	35	25	61	45	9
38	316	54	42	52	74	67	27

Table 6. (concl.)

Pupil	:Total	:Subject	:Subject	:Subject	:Subject	:Subject	:Subject
	:test	:test	:test	:test	:test	:test	:test
		:reading	:reading	:math.	:funda-	:mech.	:spell-
		:voc.	:compre-	:reason-	:mentals	:of Eng.	: ing
			:hension	: ing		:& gram.	
39	283	56	41	43	67	53	23
40	253	46	30	38	65	59	15
Totals							
	10,370	1,946	1,519	1,456	2,492	2,258	699

Table 7. Per cent of Correct Responses per Question for School X on the California Achievement Tests (Form AA) by Class and Entire School.

Question Number	Freshman Class	Sophomore Class	Junior Class	Senior Class	Total School
	: 32	: 42	: 23	: 40	: 137

Reading Vocabulary - Mathematics

1	84	93	96	67	84
2	78	88	91	62	78.8
3	72	93	74	55	65
4	81	86	87	65	75.9
5	56	76	70	50	62.8
6	56	76	61	60	64.2
7	37	50	26	55	44.5
8	34	60	57	55	51.1
9	63	86	65	57	68.6
10	34	71	61	50	54.7
11	47	50	61	45	49.6
12	22	48	17	43	35
13	17	57	35	45	40.9
14	40	52	30	55	46.7
15	31	35	26	43	35
16	50	40	35	52	45.3
17	22	50	39	52	42.3
18	22	48	30	50	39.5
19	0	14	17	35	17.5
20	9	14	30	45	24.8
21	6	50	39	50	43
22	22	14	22	45	26.3

Reading Vocabulary - Science

23	94	95	96	55	83.2
24	81	90	87	52	79.6
25	72	86	96	62	77.4
26	84	95	100	67	81
27	72	79	74	52	68.6
28	60	86	74	62	70.8
29	37	50	30	43	41.6
30	78	74	52	48	63.5
31	50	57	70	50	55.5
32	25	57	87	65	57
33	37	65	39	62	53.3
34	56	57	70	50	49.6
35	25	55	48	38	41.6

Table 7. (cont.)

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137
36	13	60	65	65	51.1
37	22	38	26	57	38
38	28	57	22	52	43
39	72	50	74	57	61.3
40	16	48	57	43	40.1
41	40	55	39	55	48.9
42	22	55	48	62	48.2
43	6	19	0	43	13.1
44	13	35	30	52	34.3

Reading Vocabulary - Social Science

45	9	19	30	43	25.5
46	75	0	91	62	87.6
47	97	0	96	62	87.6
48	75	88	74	72	78.1
49	53	71	74	57	63.5
50	63	81	74	62	70.1
51	53	81	87	62	70.1
52	31	75	57	65	59.9
53	44	48	61	75	57
54	63	71	57	67	65.7
55	37	48	43	67	50.4
56	44	45	39	48	44.5
57	60	67	65	62	63.5
58	22	35	35	40	33.6
59	53	52	43	55	51.8
60	13	26	30	45	29.2
61	37	33	30	60	41.6
62	47	57	61	65	57.7
63	19	50	22	55	39.5
64	37	48	22	52	42.3
65	13	29	30	50	31.4
66	19	26	27	43	29.2
67	22	26	17	65	35

Reading Vocabulary - General

68	16	24	4	50	27
69	81	88	96	62	60.5
70	60	83	78	50	68.6

Table 7. (cont.)

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137
71	69	74	78	55	50.8
72	47	67	57	50	57.7
73	53	62	52	60	59.1
74	17	42	48	55	47.5
75	34	57	43	43	40.9
76	31	71	61	57	51.8
77	19	71	61	50	51.1
78	25	38	30	52	38
79	28	48	39	52	42
80	31	38	52	48	38
81	17	33	17	45	30.7
82	25	26	26	40	29.9
83	40	19	39	50	43.8
84	22	24	22	48	29.9
85	25	50	35	52	42.3
86	47	50	26	48	44.5
87	19	21	13	43	25.5
88	16	14	17	43	23.3
89	19	5	0	48	19.7
90	24	7	9	35	11.7

Reading Comprehension - Following Directions

91	44	60	87	67	62.8
92	72	79	61	60	68.6
93	91	95	96	57	83.2
94	24	95	91	55	82.5
95	69	81	87	50	70.1
96	50	48	39	40	44.5
97	50	62	78	57	60.5
98	19	40	43	50	40.9
99	0	19	9	43	19.7
100	9	29	13	55	29.2

Reading Comprehension - Reference Skills

101	78	76	78	60	72.2
102	91	95	96	57	83.2
103	94	100	96	60	86
104	19	26	9	43	26.3
105	44	40	26	55	43

Table 7. (cont.)

Question number	: Freshman : class : 32	: Sophomore : class : 42	: Junior : class : 23	: Senior : class : 40	: Total : school : 137
106	28	21	43	52	35.8
107	91	98	100	62	86
108	91	95	100	72	88.3
109	94	90	96	60	83.2
110	50	60	78	52	58.2
111	9	17	22	38	21.9
112	40	57	61	62	55.5
113	44	40	39	38	40.1
114	25	43	26	52	38.7
115	31	29	35	57	38.7

Reading Comprehension - Interpretations

116	56	71	48	52	58.4
117	56	60	70	62	61.3
118	69	83	100	62	76.7
119	56	71	48	60	60.5
120	63	76	100	60	72.2
121	72	88	74	60	73.7
122	56	67	61	70	64.2
123	47	55	39	43	46.7
124	28	74	57	43	51.1
125	81	98	96	65	83.2
126	84	88	74	62	77.4
127	81	76	78	50	70.1
128	75	83	83	62	75.2
129	25	62	48	57	29.6
130	81	74	70	62	71.5
131	63	74	91	48	66.4
132	72	71	65	62	85.4
133	97	95	91	62	76.7
134	78	79	96	67	76.7
135	56	71	78	67	67.9
136	47	45	65	50	50.4
137	72	79	52	57	66.4
138	84	98	95	60	83.2
139	53	52	78	65	60.5
140	66	81	74	62	70.8
141	50	62	70	52	57.7
142	40	65	65	65	59.1
143	34	57	65	62	54.7
144	25	43	35	48	38.7
145	63	48	17	43	44.5

Table 8. Per cent of correct responses per question for school X on the California Achievement Tests (Form AA) by class and complete school.

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137

Mathematics Reasoning - Number Concept

1	81	88	74	60	76.9
2	60	74	65	57	64.2
3	72	57	48	60	59.9
4	72	88	87	65	77.4
5	97	98	100	65	88.3
6	91	83	70	60	75.9
7	75	62	52	48	73
8	37	33	26	40	35
9	63	52	17	57	48.9
10	53	43	57	45	48.2
11	56	71	65	48	59.9
12	69	86	91	62	75.9
13	69	83	70	62	71.5
14	6	48	52	45	38
15	31	29	35	50	36.5
16	22	29	52	57	39.5
17	6	29	9	48	25.5
18	0	31	22	65	32.1
19	16	31	30	62	36.5
20	16	33	22	60	35

Mathematics Reasoning - Symbols and Rules

21	48	86	87	55	67.9
22	49	65	61	55	56.2
23	28	31	39	52	38
24	44	65	65	67	60.5
25	3	21	74	62	38
26	78	12	91	67	75.2
27	9	21	43	60	33.6
28	3	19	0	52	38.7
29	87	90	83	67	81.8
30	81	93	83	65	80.3
31	40	60	52	55	52.5
32	31	45	58	60	46.7
33	34	65	57	60	54.7
34	66	88	78	67	75.2

Table 8. (cont.)

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137
35	44	60	48	57	53.3
36	19	83	83	65	62.8

Mathematics Reasoning - Numbers and Equations

37	87	90	91	60	81
38	44	74	83	65	65.7
39	47	74	83	57	64.2
40	69	93	91	67	79.6
41	60	90	96	60	75.2
42	34	62	83	52	56.2
43	81	88	83	55	15.9
44	37	67	70	70	61.3
45	19	65	48	50	46.7

Mathematics Reasoning - Problems

46	78	90	91	65	80.3
47	72	74	65	52	65.7
48	60	81	74	57	67.9
49	19	40	43	50	83.7
50	56	65	65	50	58.4
51	66	83	61	57	67.9
52	72	81	83	65	74.5
53	50	65	78	43	57
54	60	79	70	52	65
55	56	95	87	57	73.7
56	22	50	57	55	46
57	40	71	65	67	62
58	9	33	4	55	29.2
59	13	57	43	38	38.7
60	0	12	9	40	16.8

Mathematics Fundamentals - Addition

61	97	100	91	65	87.6
62	97	95	91	65	86
63	87	95	96	55	81.8
64	91	98	87	62	84
65	47	74	61	48	60.5
66	47	74	78	57	63.5

Table 8. (cont.)

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137
67	87	100	91	60	84
68	78	88	91	52	75.9
69	84	95	91	62	82.5
70	91	100	91	67	86.9
71	91	95	100	60	85.4
72	81	93	83	60	78.8
73	69	81	74	65	72.2
74	66	88	78	72	76.7
75	34	57	35	50	46
76	60	71	70	62	65.7
77	37	76	47	65	60.5
78	50	81	57	67	65.7
79	25	81	43	50	52.5
80	3	5	35	50	22.6

Mathematics Fundamentals - Subtraction

81	91	83	91	67	91.8
82	97	81	91	65	81.8
83	91	81	87	62	78.8
84	91	82	91	67	81.8
85	84	79	83	62	75.9
86	60	55	52	65	58.4
87	91	83	91	65	81
88	87	86	87	67	81
89	84	71	78	57	71.5
90	87	71	78	72	76.7
91	87	81	83	60	76.7
92	84	69	65	62	70.1
93	75	67	78	65	68.6
94	60	74	52	62	63.5
95	53	60	57	48	54
96	72	74	91	67	74.5
97	56	62	74	65	63.5
98	50	52	74	70	60.5
99	16	57	57	62	48.9

Mathematics Fundamentals - Multiplication

100	6	14	48	55	29.9
101	100	100	100	62	89
102	100	95	100	62	87.6

Table 8. (concl.)

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137
103	81	93	91	55	78.8
104	94	100	96	62	86.9
105	84	88	87	65	80.3
106	28	42	39	48	40.1
107	94	95	87	67	85.4
108	78	86	83	45	71.5
109	91	81	83	55	75.9
110	87	90	74	62	78.8
111	87	93	91	65	83.2
112	66	67	70	55	63.5
113	69	67	61	52	62
114	66	79	65	65	69.3
115	47	67	65	65	61.3
116	72	88	83	65	76.7
117	60	81	83	62	70.8
118	34	81	70	57	61.3
119	44	29	61	72	50.4
120	6	17	61	65	35.8

Mathematic Fundamentals - Division

121	100	100	100	65	89.8
122	87	90	96	60	81.8
123	75	98	91	72	84
124	84	98	96	60	83.2
125	75	95	83	52	73.7
126	81	95	83	52	77.4
127	56	69	48	38	53.3
128	91	93	87	57	81
129	87	90	87	60	80.3
130	87	90	78	60	78.8
131	50	74	78	67	67.1
132	72	79	78	60	71.5
133	75	81	91	57	74.5
134	22	52	35	72	45.3
135	53	74	65	50	60.5
136	87	93	87	65	82.5
137	78	86	83	62	76.7
138	37	74	74	67	63.5
139	13	12	61	70	37.2
140	13	14	26	40	23.3

Table 9. Per cent of correct responses per question for school X on the California Achievement Tests (Form AA) by class and complete school.

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137

Mechanics of English and Grammar - Capitalization

1	100	100	96	98	99
2	100	98	100	100	99.3
4	97	88	96	98	94.1
5	100	83	83	92	89.8
6	100	98	100	100	99.3
7	97	100	100	100	99.3
8	5	62	70	80	73.7
10	91	98	100	100	97.1
12	87	86	87	90	81.6
13	81	81	74	92	83.2
14	91	88	87	85	87.6
15	87	62	52	77	70.8

Mechanics of English and Grammar - Punctuation

17	84	81	65	67	75.2
20	84	83	61	62	73.7
21	50	48	43	72	54.7
22	69	57	43	67	60.5
25	53	40	35	65	49.6
26	40	24	17	48	33.6
27	40	33	0	50	35.8
30	40	14	18	50	29.2
32	40	14	18	48	27.8
34	40	17	18	60	32.9

Mechanics of English and Grammar - Words and Sentences

36	94	90	100	92	93.5
37	97	100	100	100	99.3
38	63	74	65	50	62.8
39	94	98	100	100	97.8
40	91	88	96	100	93.5
41	66	43	39	57	51.8
42	97	93	83	87	90.5
43	94	93	100	100	96.4
44	91	67	74	55	70.1

Table 9. (cont.)

Question number	Freshman class	Sophomore class	Junior class	Senior class	Total school
	32	42	23	40	137
45	91	98	100	100	97.1
46	78	74	43	57	65
47	78	69	65	70	70.8
48	87	95	91	98	93.5
49	100	100	96	100	99.3
50	94	95	83	95	92.7
51	91	98	87	82	89.8
54	84	86	83	87	85.4
55	81	81	74	75	78.1
56	97	100	91	87	94.1
57	75	79	57	67	70.8
58	78	88	83	77	81.8
59	78	55	78	77	70.8
60	69	55	65	57	60.5

Mechanics of English and Grammar - Parts of Speech

61	78	76	70	82	77.4
62	87	90	94	85	88.3
63	84	93	83	85	86.9
64	84	93	91	90	89.8
65	81	81	65	77	77.4
66	78	71	61	72	71.5
67	94	95	100	90	94.1
68	87	81	61	75	77.4
69	37	12	22	38	17.5
70	60	55	61	57	57.7
71	78	88	83	85	84
72	84	76	91	92	85.4
73	84	74	70	67	73.7
74	81	65	78	65	70.8
75	87	88	96	90	89.8

Mechanics of English and Grammar - Syntax

77	81	81	87	85	83.2
78	56	60	39	60	55.5
79	63	71	70	38	59.1
80	15	71	57	50	63.5
81	53	60	43	43	50.4
82	60	40	26	33	40.1

Table 9. (concl.)

Question number	: : :	Freshman class 32	: : :	Sophomore class 42	: : :	Junior class 23	: : :	Senior class 40	: : :	Total school 137
83		60		43		35		28		40.9
84		56		50		35		28		42.3
85		81		90		87		82		85.4
86		60		38		43		33		42.3
87		60		50		39		38		46.7
88		53		29		26		8		27.8
89		50		12		13		13		21.2
90		75		71		70		60		68.6

Table 10. Schedule of classes for school X.

Class period	Teacher A	Teacher B	Teacher C	Teacher D	Teacher E	Teacher F	Teacher G	Teacher H	Teacher I	Teacher J
1	Band				Home Economics III	Study Hall	Typing I	English I		General Science
2	Lessons	Current History	Physical Education	Study Hall	Home Economics III	Study Hall	Typing I	English I	Vocational Agriculture	General Science
3	Lessons	World History	Physical Education	Study Hall	Home Economics	English III	Typing II	Spanish I	Vocational Agriculture	Elementary Biology
4	Study Hall		Geometry	Algebra	Home Economics	English III	Elementary Bookkeeping	Spanish I	Vocational Agriculture	Animal Biology
5						Study Hall				
6	Lessons	American History	Advanced Algebra	Algebra	Study Hall		Short-hand I	English I	Vocational III IV	Psychology
7	Lessons	American History	Study Hall	General Math.		English II	Short-hand II	Sociology	Vocational Agriculture III	Driver's Education
8	Lessons	English IV	Athletics	General Math.	Advanced Sewing	English II	Typing I	Study Hall	Vocational Agriculture III	Office

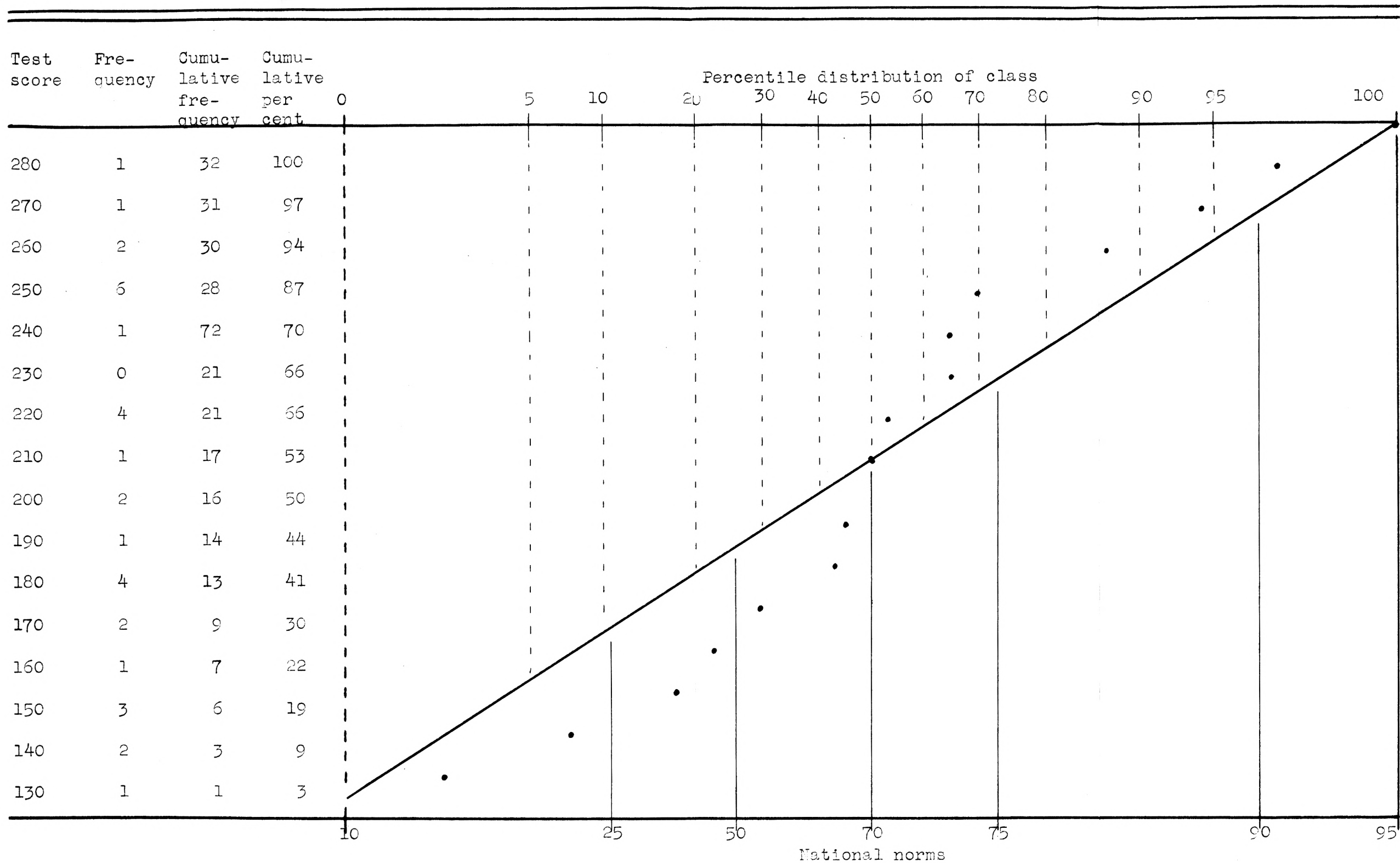


Fig. 1. Distribution on total test for freshman class of school X on California Achievement Test (form AA)

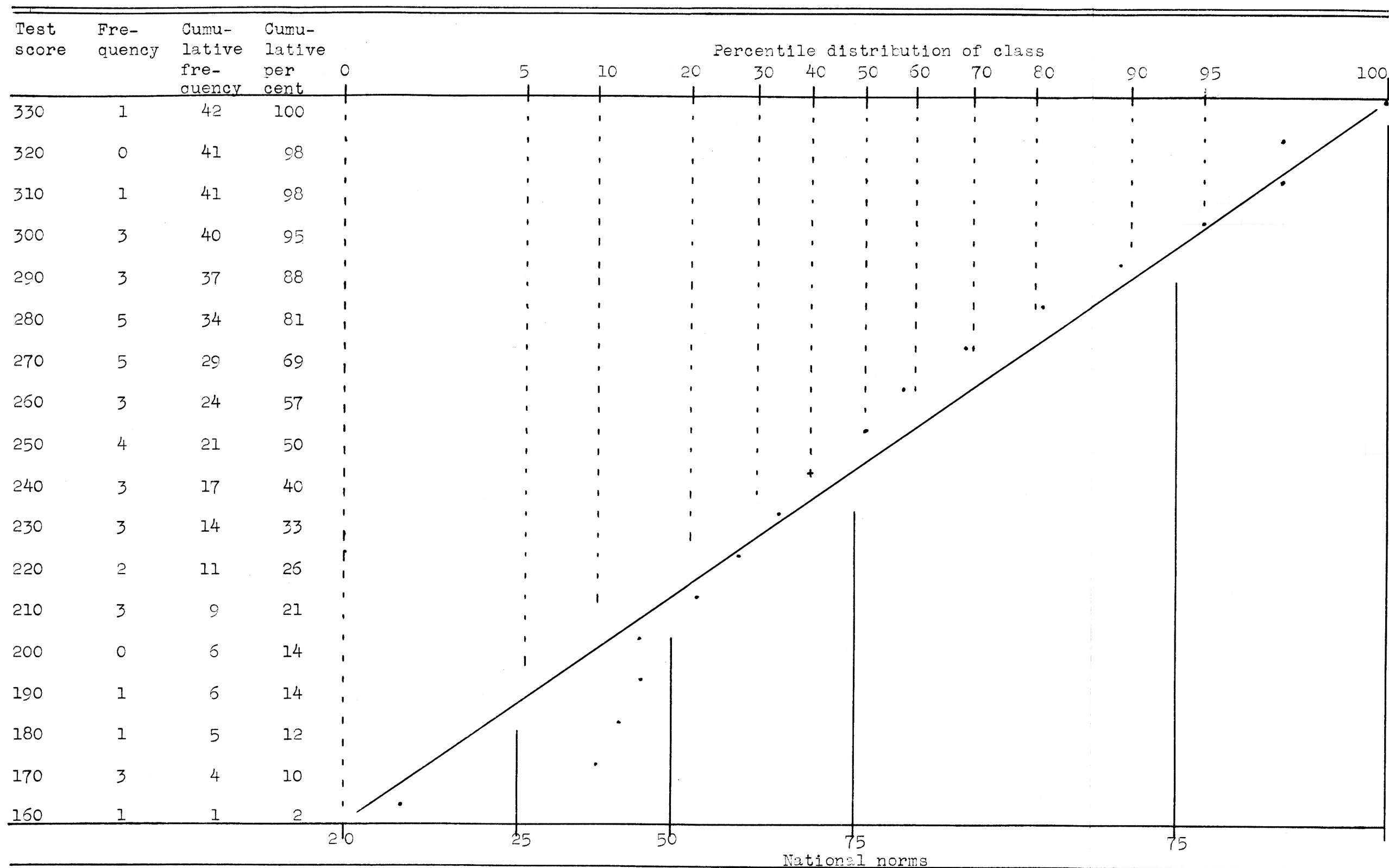


Fig. 2. Distribution on total test for sophomore class of school X on California Achievement Test (form AA)

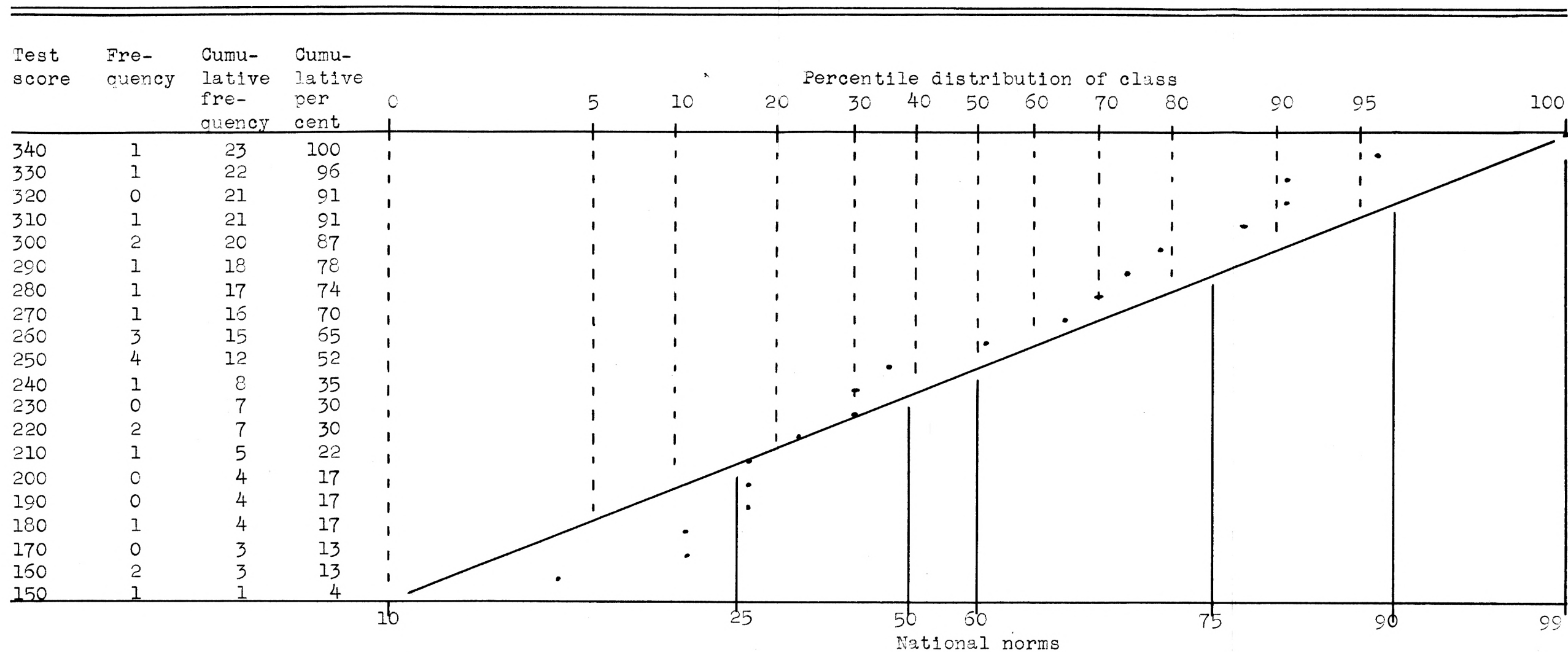


Fig. 3. Distribution on total test for junior class of school X on California Achievement Test (form AA)

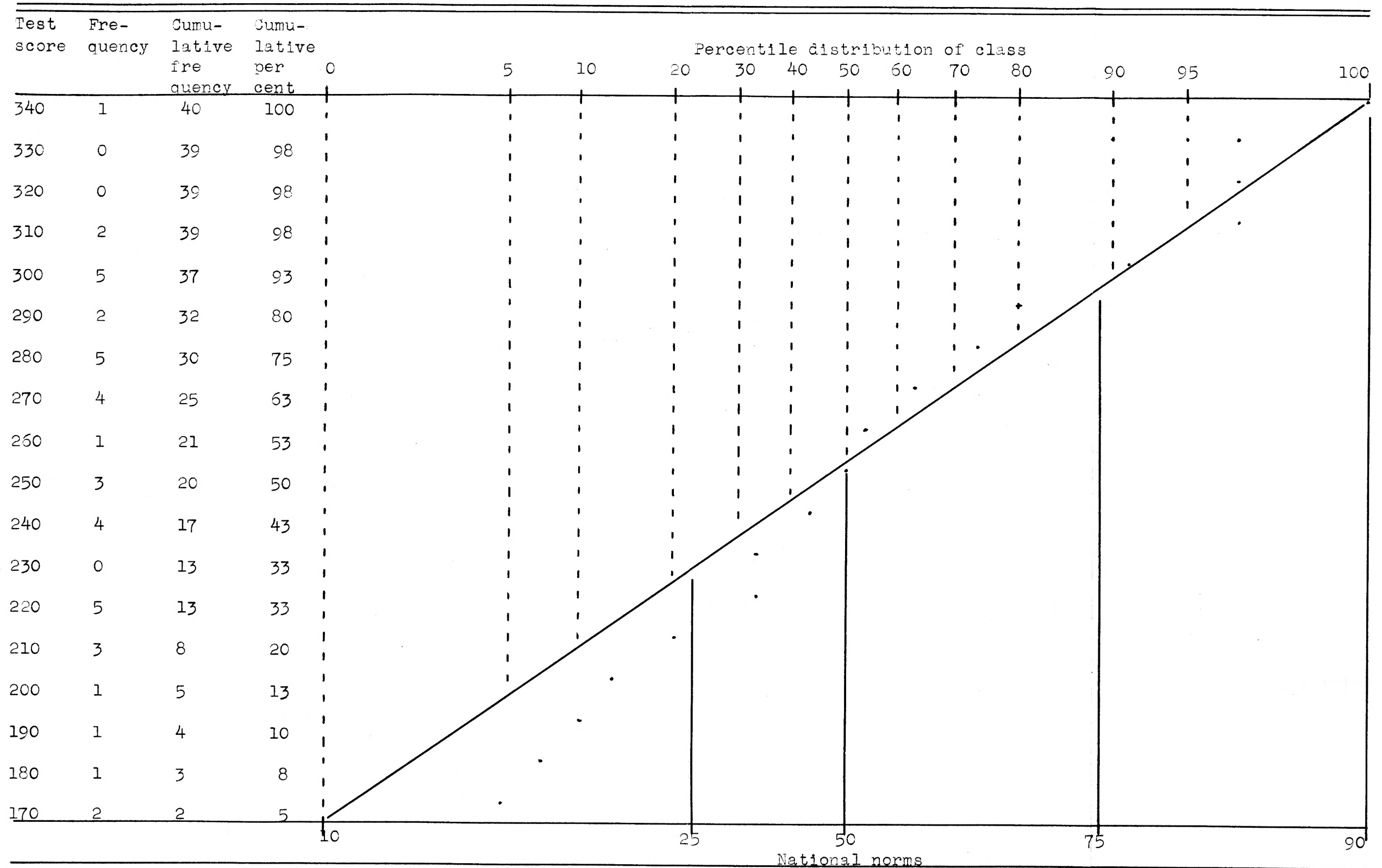


Fig. 4. Distribution on total test for senior class of school X on California Achievement Test (form AA)