

Examiner's guide for the psychological examination of recruits / prepared especially for military use by the Sub-Committee on Methods of Examining Recruits appointed by the Psychology Committee of the National Research Council ; revised by direction of the Surgeon General of the Army.

Contributors

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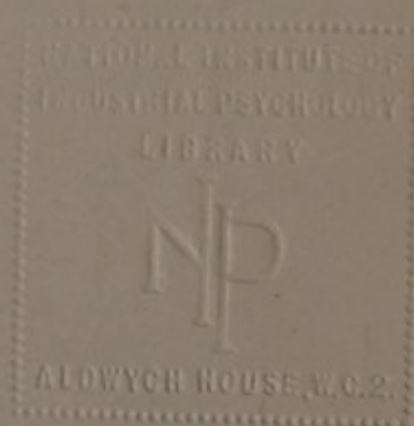
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EXAMINER'S GUIDE

FOR THE

PSYCHOLOGICAL EXAMINATION OF RECRUITS

Prepared especially for military use by the Sub-Committee on Methods
of Examining Recruits appointed by the Psychology
Committee of the National Research Council.

U.S.A.

Revised by direction of the Surgeon General of the Army and printed
by the Medical Department, U. S. A.,
September, 1917.

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INTRODUCTORY EXPLANATIONS

1. *Object of the tests.*

- (a) To sift out those mental defectives who are not qualified for military service.
- (b) To discover men of superior ability for report to the Commanding and Company officers. These men should be considered for non-commissioned officers or for tasks of special responsibility.
- (c) To discover men with marked special skill.

2. *Plan of the work.*

- (1) Literacy Test:
 - Time, 5 to 10 minutes;
 - Number, 50 to 80 men in a group.
- (2) Group intelligence examination *a*:
 - Time, 40 to 50 minutes;
 - Number, 50 to 80 men in a group.
- (3) Group intelligence examination *b*, for those who react slowly in (2):
 - Time, 40 to 50 minutes;
 - Number, any number up to 80 in a group.
- (4) Group examination for skill:
 - Time, 30 to 40 minutes;
 - Number, 10 to 25 men in a group.
- (5) Individual examination, for intelligence, skill, or both:
 - Time, 30 to 60 minutes;
 - Number, 1 at a time.

A company will ordinarily be taken in three groups of not more than 80 men each. The order of procedure is as follows:—

(a) A group of not more than 80 men will report to the Chief Psychological Examiner, at a room designated for examinations (1) and (2).

(b) The Literacy Test is given, after which three or four assistants collect the Literacy Test blanks, look them over quickly (this can be done in 5 minutes or less), and send those who have shown themselves illiterates directly to the Group examination for skill. The others remain for test (2).

(c) Those making an unsatisfactory score in Group Intelligence Examination *a* will report (the following afternoon if possible) in groups of not more than 80, in designated room for Group Intelligence Examination *b*, which is a similar test with extended time.

(d) Individuals who have made a consistently low score in the group tests will report by appointment at individual examining rooms. It is estimated that not over 3 to 5 per cent of the men will require individual examination.

Summarizing, all men take (1), and either (2) or (4). Those who pass in (1), take (2) immediately. Those who fail in (1), go directly to (4). Those who fail in (2), take (3), failing in (3), they take (4); failing in (4), they take (5). Those who fail in (1) *and* (4) also take (5).

3. *Organization and routine.*

The value of the work and the amount accomplished will depend largely upon the efficient organization of routine procedure. The following are specially important:

(1) Arrangements should insure the securing of men for group or individual testing without loss of time.

(2) Test blanks should be scored as early as possible after a test is taken, so that individuals who fail may be summoned promptly for additional examination.

(3) The data for each individual should be transferred to the Individual Filing Card at the earliest possible date after his examinations are completed.

LITERACY TEST

This is given to all men at the time they are assembled for Group Intelligence Examination *a*, and precedes the latter. As soon as the men are seated (group of not more than 80), supply each with a literacy test blank (blank side up) and a pencil. After the materials are distributed, E. says: "Turn over the paper. Read what it says, and do what it tells you to do. Ask no questions. You will have three minutes." After three minutes the papers are collected and quickly looked over by three or four assistants while the men remain seated. This should not require more than 3 to 5 minutes. Those who have filled the blanks and have made few or no errors in line 3 should remain seated for Group Intelligence Examination *a*. Those who could not write or who have made many errors in lines 1 and 2 should be sent at once to the Group Skill Tests.

Coaching is prevented by using Literacy blanks A, B, C and D in miscellaneous order.

GROUP INTELLIGENCE EXAMINATION *a*

This is taken by all who have passed the literacy test, and immediately after the illiterates have been transferred to the Group Skill Test.

In giving the directions, speak rather slowly, distinctly, and with proper emphasis. Expect and demand perfect order and prompt response to commands. Say: "This is an examination to assist in finding out what you are best fitted to do in the Army (Navy). I'm going to pass around some papers now. Don't turn the pages until I tell you to." Have the papers distributed.

When all the men are supplied, say: "In the Army (Navy) you often have to listen to commands and then carry them out exactly. I am going to give you some commands to see how exactly *you* can carry them out. Listen closely. Do what I tell you to do as carefully and quickly as you can. Some of the things will be very easy for you. Some you may find hard. Ask no questions. Attend strictly to business. Don't watch any other man to see what *he* does.

"Now, on the page before you, write your name after the word 'Name.' Write your first name first, then your middle initial, if any, and your last name. Take time to write *very plainly*."

After name has been written say: "Put your age in years after the word 'Age.'"

"In the next line write your company, battalion, regiment, and division.

"In the next line write the name of the country in which you were born. If you were not born in the United States tell next the number of years you have lived in this country. After 'Race,' write the word 'White.' (In examining negro troops substitute the word 'Negro.')

"In the next line, after 'Occupation,' write your usual work, trade or business (such as carpenter, grocery clerk, laborer, farmer, student).

"Next put down how much you earned a week before you entered the Army (Navy).

"After 'Schooling,' draw a line under the highest grade or school you attended. For example, if the highest grade you attended was the 5th grade, draw a line under Grade 5; if you finished the second year in the high school or preparatory school, draw a line under High School, Year 2, etc. (Explain further if necessary.)

"Look at your papers. Just below where you have been writing, there are several sets of forms—squares, circles, and so forth. First you will be told to do something with the squares at 1, afterwards with the circles at 2, and so on.

"When I call 'attention,' stop instantly whatever you are doing and hold your pencil up, with your elbow on the table—so. Don't put your pencil down to the paper until I say 'go.' (Examiner lowers his pencil.) Listen carefully to what I say. Do just what you are told to do. Ask no questions. As soon as you are through, pencils up. Remember, wait for the word 'Go.'"

N. B. Examiner.—Give the following directions very distinctly and at moderate speed. After giving the command "Attention," the examiner should always notice carefully whether all pencils are up and never proceed until they are. This is especially important in the beginning. Be careful not to pause or to drop the voice in the course of the compound direction, *e. g.*, in 2, before the words "and also." Raise your pencil whenever you say "attention." Lower it promptly whenever you say "go." Be careful to use the directions for Test 1 that fit the form of record blank distributed.

TEST 1, FORM A

1. "Attention! 'Attention' always means 'Pencils up!' Look at 1. When I say 'go' but not before, make a cross in the largest square.—GO!" (Allow not over 3 sec.)

2. "Attention! Look at 2. When I say 'go' make a cross in the first circle and also a figure 1 in the third circle—GO!" (Allow not over 5 sec.)

3. "Attention! Look at 3. When I say 'go' draw a line from Circle 1 to Circle 4 that will pass *above* Circle 2 and *below* Circle 3.—GO!" (Allow not over 5 sec.)

4. "Attention! Look at the square and triangle at 4. When I say 'go' make a cross in the space which is in the triangle but not in the square, and also make a figure 1 in the space which is in the triangle and in the square.—GO!" (Allow not over 10 sec.)

5. "Attention! Look at 5. When I say 'go' make a figure 1 in the space which is in the circle but not in the triangle or square, and also make a figure 2 in the space which is in the triangle and circle, but not in the square.—GO!" (Allow not over 10 sec.)

6. "Attention! Look at 6. When I say 'go' cross out each number that is more than 20 but less than 30.—GO!" (Allow not over 15 sec.)

7. "Attention! Look at 7. Notice the three circles and the three words. When I say 'go' make in the *first* circle the *first* letter of the *first* word; in the *second* circle the *first* letter of the *second* word and in the *third* circle the *last* letter of the *third* word.—GO!" (Allow not over 10 sec.)

8. "Attention! Look at 8. When I say 'go' put in the second circle the right answer to the question: 'How many months has a year?' In the third circle do nothing, but in the fourth circle put any number that is a wrong answer to the question that you just answered correctly.—GO!" (Allow not over 10 sec.)

(N. B. Examiner.—In reading 9, don't pause at the word CIRCLE as if ending a sentence.)

9. "Attention! Look at 9. If a machine gun can shoot more bullets a minute than a rifle, then (when I say 'go') put a cross in the second circle; if not, draw a line *under* the word NO.—GO!" (Allow not over 10 sec.)

10. "Attention! Look at 10. When I say 'go' *cross out* the letter just before C and also draw a line *under* the second letter before H.—GO!" (Allow not over 10 sec.)

"During the rest of this examination don't turn any page forward or backward unless you are told to. Now turn over the page to Test 2."

TEST 1, FORM B

1. "Attention! 'Attention' always means 'Pencils up!' Look at 1. When I say 'go' but not before, make a cross in the smallest square.—GO!" (Allow not over 3 sec.)

2. "Attention! Look at 2. When I say 'go' make a cross in the second circle and also a figure 1 in the third circle.—GO!" (Allow not over 5 sec.)

3. "Attention! Look at 3. When I say 'go' draw a line from Circle 2 to Circle 5 that will pass *above* Circle 3 and *below* Circle 4.—GO!" (Allow not over 5 sec.)

4. "Attention! Look at the square and triangle at 4. When I say 'go' make a cross in the space which is in the square but not in the triangle, and also make a figure 1 in the space which is in the triangle and in the square.—GO!" (Allow not over 10 sec.)

5. "Attention! Look at 5. When I say 'go' make a figure 1 in the space which is in the triangle but not in the circle or square and also make a figure 2 in the space which is in the square and circle but not in the triangle.—GO!" (Allow not over 10 sec.)

6. "Attention! Look at 6. When I say 'go' cross out each number that is more than 30 but less than 40.—GO!" (Allow not over 15 sec.)

7. "Attention! Look at 7. Notice the three circles and the three words. When I say 'go' make in the *first* circle the *last* letter of the *first* word; in the *second* circle the *last* letter of the *second* word and in the *third* circle the *third* letter of the *third* word.—GO!" (Allow not over 10 sec.)

8. "Attention! Look at 8. When I say 'go' put in the second circle the right answer to the question: 'How many months has a year?' In the fourth circle do nothing, but in the fifth circle put any number that is a wrong answer to the question that you just answered correctly.—GO!" (Allow not over 10 sec.)

(N. B. Examiner.—In reading 9, don't pause at the word CIRCLE as if ending a sentence.)

9. "Attention! Look at 9. If a regiment is bigger than a company, then (when I say 'go') put a cross in the first circle; if not, draw a line *under* the word NO.—GO!" (Allow not over 10 sec.)

10. "Attention! Look at 10. When I say 'go' *cross out* the letter just before D and also draw a line *under* the second letter before I.—GO!" (Allow not over 10 sec.)

"During the rest of this examination don't turn any page forward or backward unless you are told to. Now turn over the page to Test 2."

TEST 1, FORM C

1. "Attention! 'Attention' always means 'Pencils up!' Look at 1. When I say 'go' but not before, make a cross in the first square.—GO!" (Allow not over 3 sec.)

2. "Attention! Look at 2. When I say 'go' make a figure 1 in first circle and also a cross in the third circle.—GO!" (Allow not over 5 sec.)

3. "Attention! Look at 3. When I say 'go' draw a line from Circle 3 to Circle 6 that will pass *above* Circle 4 and *below* Circle 5.—GO!" (Allow not over 5 sec.)

4. "Attention! Look at the square and triangle at 4. When I say 'go' make a figure 1 in the space which is in the triangle but not in the square, and also make a cross in the space which is in the triangle and in the square.—GO!" (Allow not over 10 sec.)

5. "Attention! Look at 5. When I say 'go' make a figure 1 in the space which is in the square and not in the circle or triangle, and also make a figure 2 in the space which is in the circle and triangle but not in the square.—GO!" (Allow not over 10 sec.)

6. "Attention! Look at 6. When I say 'go' cross out each number that is more than 40 but less than 50.—GO!" (Allow not over 15 sec.)

7. "Attention! Look at 7. Notice the three circles and the three words. When I say 'go' make in the *first* circle the *first* letter of the *first* word; in the *second* circle the *second* letter of the *second* word and in the *third* circle the *last* letter of the *last* word.—GO!" (Allow not over 10 sec.)

8. "Attention! Look at 8. When I say 'go' put in the first circle the right answer to the question: 'How many months has a year?' In the third circle do nothing, but in the fourth circle put any number that is a wrong answer to the question that you just answered correctly.—GO!" (Allow not over 10 sec.)

(N. B. Examiner.—In reading 9, don't pause at the word CIRCLE as if ending a sentence.)

9. "Attention! Look at 9. If a battleship is larger than a submarine, then when I say 'go' put a cross in the third circle; if not, draw a line *under* the word NO.—GO!" (Allow not over 10 sec.)

10. "Attention! Look at 10. When I say 'go' *cross out* the letter just before E and also draw a line *under* the second letter before H.—GO!" (Allow not over 10 sec.)

"During the rest of the examination don't turn any page forward or backward unless you are told to. Now turn over the page to Test 2."

TEST 1, FORM D

1. "Attention! 'Attention!' always means 'Pencils up!' Look at 1. When I say 'go' but not before, make a cross in the last square.—GO!" (Allow not over 3 sec.)

2. "Attention! Look at 2. When I say 'go' make a figure 2 in the second circle and also a cross in the third circle.—GO!" (Allow not over 5 sec.)

3. "Attention! Look at 3. When I say 'go' draw a line from Circle 1 to Circle 4 that will pass *below* Circle 2, and *above* Circle 3.—GO!" (Allow not over 5 sec.)

4. "Attention! Look at the square and triangle at 4. When I say 'go' make a figure 1 in the space which is in the square but not in the triangle, and also make a cross in the space which is in the triangle and in the square.—GO!" (Allow not over 10 sec.)

5. "Attention! Look at 5. When I say 'go' make a figure 2 in the space which is in the circle but not in the triangle or the square and also make a figure 3 in the space which is in the triangle and circle but not in the square.—GO!" (Allow not over 10 sec.)

6. "Attention! Look at 6. When I say 'go' cross out each number that is more than 50 but less than 60.—GO!" (Allow not over 15 sec.)

7. "Attention! Look at 7. Notice the three circles and the three words. When I say 'go' make in the *first* circle the *last* letter of the *first* word; in the *second* circle the *middle* letter of the *second* word and in the *third* circle the *first* letter of the *third* word.—GO!" (Allow not over 10 sec.)

8. "Attention! Look at 8. When I say 'go' put in the first circle the right answer to the question: 'How many months has a year?' In the second circle do nothing, but in the fifth circle put any number that is a wrong answer to the question that you just answered correctly.—GO!" (Allow not over 10 sec.)

(*N. B. Examiner.*—In reading 9, don't pause at the word CIRCLE as if ending a sentence.)

9. "Attention! Look at 9. If taps sound in the evening, then (when I say 'go') put a cross in the first circle; if not, draw a line *under* the word NO.—GO!" (Allow not over 10 sec.)

10. "Attention! Look at 10. When I say 'go' *cross out* the letter just after F and also draw a line *under* the second letter after I.—GO!" (Allow not over 10 sec.)

"During the rest of this examination don't turn any page forward or backward unless you are told to. Now turn over the page to Test 2."

TEST 1, FORM E

1. "Attention! '*Attention!*' always means 'Pencils up!' Look at 1. When I say 'go' but not before, make a cross in the second square.—GO!" (Allow not over 3 sec.)

2. "Attention! Look at 2. When I say 'go' make a cross in the first circle and also a figure 1 in the last circle.—GO!" (Allow not over 5 sec.)

3. "Attention! Look at 3. When I say 'go' draw a line from Circle 2 to Circle 5 that will pass *below* Circle 3 and *above* Circle 4.—GO!" (Allow not over 5 sec.)

4. "Attention! Look at the square and triangle at 4. When I say 'go' make a figure 2 in the space which is in the triangle but not in the square, and also make a figure 3 in the space which is in the square and in the triangle.—GO!" (Allow not over 10 sec.)

5. "Attention! Look at 5. When I say 'go' make a figure 2 in the space which is in the triangle but not in the circle or square, and also make a figure 3 in the space which is in the square and circle but not in the triangle.—GO!" (Allow not over 10 sec.)

6. "Attention! Look at 6. When I say 'go' cross out each number that is more than 60 but less than 70.—GO!" (Allow not over 15 sec.)

7. "Attention! Look at 7. Notice the three circles and the three words. When I say 'go' make in the *first* circle the *third* letter of the *first* word; in the *second* circle the *first* letter of the *second* word and in the *third* circle the *first* letter of the *third* word.—GO!" (Allow not over 10 sec.)

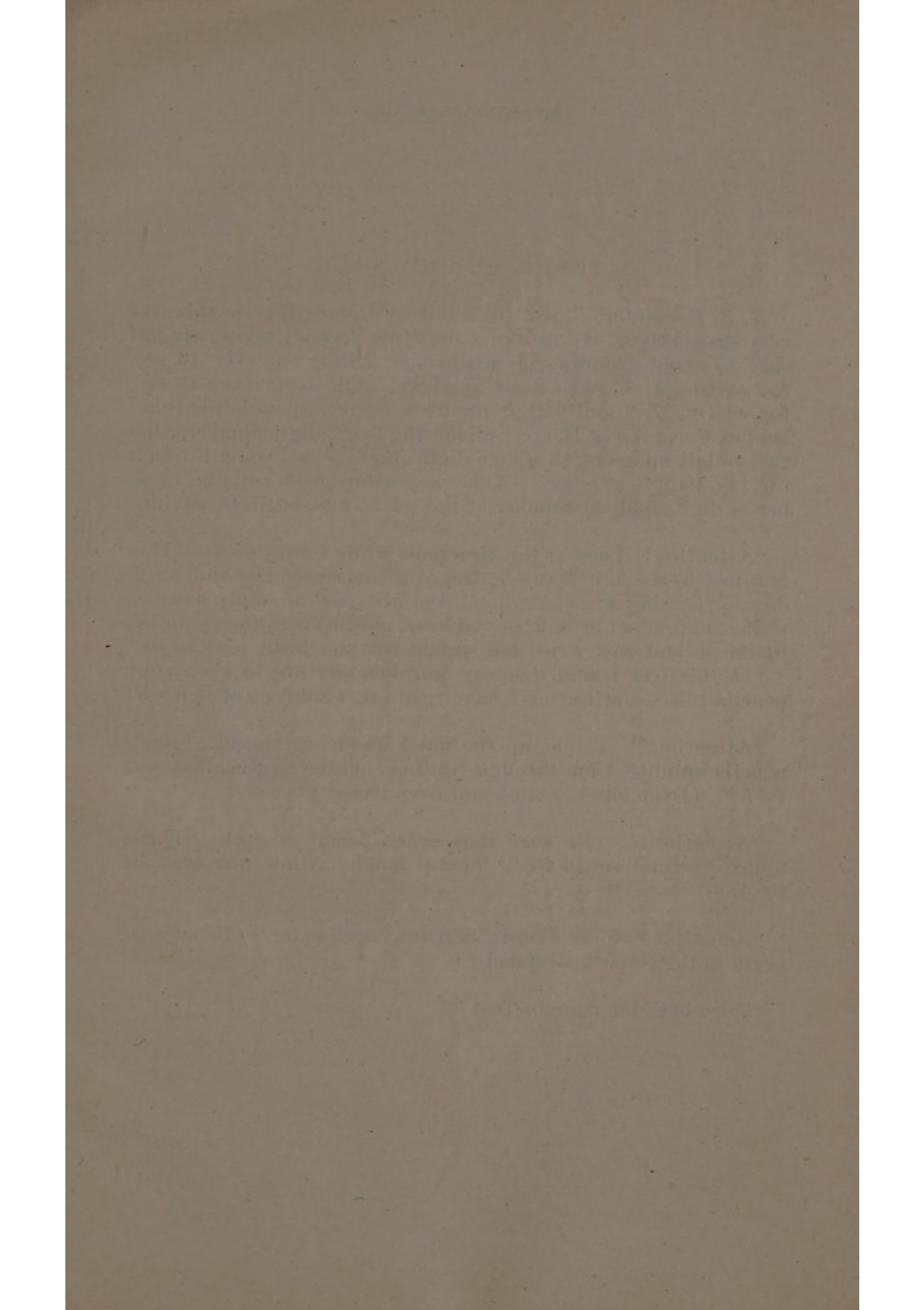
8. "Attention! Look at 8. When I say 'go' put in the third circle the right answer to the question: 'How many months has a year?' In the fourth circle do nothing, but in the fifth circle put any number that is a wrong answer to the question that you just answered correctly.—GO!" (Allow not over 10 sec.)

(N. B. Examiner.—In reading 9, don't pause at the word CIRCLE as if ending a sentence.)

9. "Attention! Look at 9. If a captain is superior to a corporal, then (when I say 'go') put a cross in the second circle; if not, draw a line *under* the word NO.—GO!" (Allow not over 10 sec.)

10. "Attention! Look at 10. When I say 'go' *cross out* the letter just after G and also draw a line *under* the second letter after H.—GO!" (Allow not over 10 sec.)

"During the rest of the examination don't turn any page forward or backward unless you are told to. Now turn over the page to Test 2."



TEST 2, MEMORY SPAN

N. B. Examiner.—Read the numbers (next page) in this test very distinctly at the rate of 1 digit per second, taking special care to avoid grouping or accenting. Allow not over 10 sec. for writing 4, 5, and 6-digit numbers. Allow not over 15 sec. for writing 7, 8 and 9-digit numbers. Proceed with the numbers of Form A (or B, etc.) giving the two 3-digit numbers, the two 4-digit numbers, the two 5-digit numbers and so on through the two 9-digit numbers. Announce before each set, the number of digits and the number of the set. Thus, begin by saying:

“Attention! Look at the directions while I read them. ‘This is a test to see how many figures you can remember and write down *after* they are spoken. In the first row of *empty* squares write the first set of figures you hear, as shown in the samples; in the second row write the second set you hear, and so on.’

“In this test I shall not say ‘go,’ but you are to keep your pencils raised until after I have read the whole set of figures.”

“Attention!” (Hold up the hand as an example.) “Keep pencils up until I am through reading. Three figures, first set, 1-3-5.” (Drop hand. Allow not over 10 sec.)

“Attention!” (Be sure that every pencil is up.) “Three figures, second set, 6-4-1.” (Drop hand. Allow not over 10 sec.)

“Attention! Four figures, first set,” and so on. (Be sure to begin in the correct column.)

“Turn over the page to Test 3.”

MATERIALS FOR GROUP TEST 2, MEMORY SPAN AND INDIVIDUAL TEST D, DIGITS BACKWARD

	A	B	C	D	E
4 Figures, 1st Set-----	2-8-6-1	3-9-4-7	2-6-3-9	2-8-5-3	4-1-6-2
4 Figures, 2d Set-----	5-3-9-4	5-1-8-3	3-7-2-5	9-6-1-7	7-5-8-4
5 Figures, 1st Set-----	7-4-2-9-6	5-1-4-8-6	3-8-4-2-5	3-9-2-6-1	5-8-4-7-3
5 Figures, 2d Set-----	8-5-1-6-4	1-6-9-4-7	8-3-7-5-9	4-7-1-8-6	4-7-5-2-8
6 Figures, 1st Set-----	7-2-9-5-3-6	4-7-3-6-2-9	6-3-9-1-5-8	7-3-9-4-8-1	9-5-3-8-6-2
6 Figures, 2d Set-----	8-4-2-7-5-1	1-6-2-8-4-7	5-8-4-9-3-1	4-8-1-6-3-7	4-9-7-3-6-1
7 Figures, 1st Set-----	7-4-8-2-5-9-1	9-4-1-5-8-2-7	6-2-7-1-9-5-3	5-4-9-2-7-3-6	6-1-5-3-8-2-7
7 Figures, 2d Set-----	8-3-9-6-1-5-2	8-3-6-4-1-7-2	7-1-6-3-8-5-9	2-5-1-9-4-7-3	3-6-2-5-9-1-8
8 Figures, 1st Set-----	2-6-9-5-8-3-7-1	4-1-6-3-9-5-8-2	9-4-2-7-1-5-8-6	2-7-1-5-3-9-6-4	3-8-5-9-2-7-1-6
8 Figures, 2d Set-----	3-7-2-9-4-1-5-8	2-8-3-6-4-9-1-7	6-9-7-3-8-4-1-5	3-8-5-9-4-7-1-6	1-9-4-8-6-2-5-3
9 Figures, 1st Set-----	5-9-4-8-2-7-3-1-6	9-6-4-8-3-7-2-5-1	5-1-6-9-4-2-7-3-8	9-1-6-4-8-3-7-5-2	6-9-2-5-3-7-1-8-4
9 Figures, 2d Set-----	4-2-9-3-8-6-1-7-5	1-5-8-4-2-6-9-3-7	3-8-2-5-1-6-9-7-4	5-2-7-1-8-4-9-3-6	1-8-5-9-3-7-4-2-6
NOT OVER 10 SECONDS					
NOT OVER 15 SECONDS					

TEST 3, DISARRANGED SENTENCES

"Attention!" (Hold the hand up.) "Look at the directions at the top of the page while I read them." (E. reads slowly.)

"The words *morning the rises every sun* in that order don't make a sentence; but they would make a sentence if put in the right order: *the sun rises every morning*, and this statement is true.

"Again, the words *animal a is the rare dog* would make a sentence if put in the order: *the dog is a rare animal*, but this statement is false.

"Below are twenty mixed-up sentences. Some of them are true and some are false. When I say 'go,' take these sentences one at a time. Decide what each sentence *would* say if the words were straightened out, but don't write them yourself. Then, if what it *would* say is true, draw a line under the word 'true;' if what it would say is false, draw a line under the word 'false.' If you cannot be sure, guess. The two samples are already marked as they should be. Begin with No. 1 and work right down the page until time is called.—Ready—GO!"

After **2 minutes**, say "STOP! Turn over the page to Test 4."

TEST 4, ARITHMETICAL PROBLEMS

"Attention! Look at the directions at the top of the page while I read them. 'Get the answers to these examples as quickly as you can. Use the side of this page to figure on if you need to.' I will say 'Stop' at the end of five minutes. You are not expected to finish all of them but to do as many as you can in the time allowed. The two samples are already answered correctly.—Ready—GO!"

After **5 minutes**, say "STOP! Turn over the page to Test 5."

TEST 5, INFORMATION

"Attention! Look at the directions at the top of the page while I read them." (E. reads slowly.) "Notice the sample sentence: *People hear with the—eyes—ears—nose—mouth.* The correct word is *ears*, because it makes the truest sentence. In each of the sentences below you have four choices for the last word. Only one of them is correct. In each sentence draw a line under the one of these four words which makes the truest sentence. If you cannot be sure, guess. The two samples are already marked as they should be.—Ready—GO!"

After **3 minutes**, say "STOP! Turn over the page to Test 6. Now you have to turn your books around, this way." (Examiner illustrates the necessary rotation.)

TEST 6, SYNONYM-ANTONYM

"Attention! Look at the directions at the top of the page while I read them." (E. reads slowly.)

"If the two words of a pair mean the same or nearly the same, draw a line under *same*. If they mean the opposite or nearly the opposite, draw a line under *opposite*. If you cannot be sure, guess. The two samples are already marked as they should be.—Ready—GO!"

After **1½ minutes**, say "STOP! Turn over the page to Test 7."

TEST 7, PRACTICAL JUDGMENT

"Attention! Look at the directions while I read them.

"This is a test of common-sense. Below are ten questions. Four answers are given to each question. You are to look at the answers carefully; then make a cross in the square before the best answer to each question, as in the sample at the top of the page:

"Why do we use stoves? Because

- ☐ they look well
- ☐ they are black
- ☒ they keep us warm
- ☐ they are made of iron

"Here the third answer is the best one and is marked with a cross.

"Begin with No. 1 and keep on until time is called.—Ready—GO!"

After **1 minute**, say "STOP! Turn over the page to Test 8."

TEST 8, NUMBER SERIES COMPLETION

(*N. B. Examiner.*—Give these instructions very slowly.)

"Attention! Look at the directions at the top of the page while I read them." (E. reads slowly.)

"In the lines below, each number is gotten in a certain way from the numbers coming before it. Study out what this way is in each line and then write in the space left for it the number that should come next. The first two lines are already filled in as they should be.

"Look at the first sample—2, 4, 6, 8, 10. Each number is formed by adding 2 to the number before it, so the number after 10, on the dotted line, must be 12.

"Look at the second sample—11, 12, 14, 15, 17. Here you do not add the same number each time, but you add first, one, then two; then one, then two; and so on; so, to carry out that plan, the number after 17, on the dotted line, must be 18.

"Sometimes you need to add, sometimes to subtract.—Ready—GO!"

After **2 minutes**, say "STOP! Turn over the page to Test 9."

TEST 9, ANALOGIES

"Attention! Notice the words in the first sample at the top of the page:

Sky—blue : grass, then in parenthesis, grow, green, cut,
dead

"*Sky* stands in the same relation to *blue* that *grass* does to one of the four words that follow it in parenthesis; that word is *green*, because grass is green just as sky is blue.

"Again, notice the second sample:

Fish—swims : man, then in parenthesis, boy, woman,
walks, girl

"Here the right word is *walks*. A fish swims and a man walks.

"Now notice the third sample:

Day—night : white, then in parenthesis, red, black,
clear, pure

"Here the right word is *black*. Night is the opposite of day and black is the opposite of white.

"In each of the lines below, the first two words have a certain relation. Notice that relation and draw a line under the *one* word in the parenthesis which has that particular relation to the third word. Begin with No. 1 and mark as many sets as you can before time is called.—Ready—GO!"

After **3 minutes**, say "STOP! Turn over the page to Test 10."

TEST 10, NUMBER COMPARISON

"Attention! Look at the directions at the top of the page while I read them." (E. reads slowly.)

"Draw a line under the largest number and also under the smallest number in every column on the page."

"Notice the samples. In the first sample column you see that 87 and 19 are underlined. Eighty-seven is the largest number and 19 is the smallest number in that column. In the second sample column, 23 and 98 are underlined; these are the smallest and the largest numbers in that column. In the same way draw a line under the largest number and also under the smallest number in every column on the page.—Ready—GO!"

After 2 minutes say "STOP! Turn over to page 1 again. In the upper right-hand corner where it says 'Group No. —' put the number 101 (or 102, 103, etc., according to the number of this group in the Examiner's series of groups)."

Have the examination records and pencils collected *immediately* and before the men are allowed to leave their seats.

GROUP INTELLIGENCE EXAMINATION *b*

Nature and purpose. This examination utilizes tests 3-9 of Group Examination *a*, but with considerably increased time. Its purpose is to give to those who have made a low score in Group Examination *a*, a more favorable chance to show what they can do. The proportion taking it may range from 10 per cent to 40 per cent of those who have taken Group Examination *a*. Groups as large as 80 may be tested at once. Ordinarily it will be possible to test in a single group all those of a company who have passed the literacy test but have failed to earn a satisfactory score on Group Examination *a*. The same kind of blank is used as for Group Intelligence Examination *a*, but with no attention to the Form that was used in the previous test (whether A, B, C, D or E).

Procedure. After the subjects are seated and supplied with test blanks and pencils, E says: "At the top of page 1 write your name and age, and fill out the other blanks just as you did before." After ample time has been allowed for filling the blanks, E says: "This examination is much like the one you have already had, except that you will be given more time. This time we will not take Test 1 or Test 2. Turn over the page to Test 3. (E and assistant see that all subjects have turned to Test 3.) If you have forgotten how to do this test, read the directions at the top of the page. Ready—GO!"

After 5 minutes E says: "Turn over the page to Test 4. If you have forgotten how to do this test, read the directions at the top of the page." And so on for the other tests. The time schedule for the several tests is as follows:

Test 3.	Disarranged Sentences -----	5	minutes
Test 4.	Arithmetical Reasoning -----	10	"
Test 5.	Information -----	6	"
Test 6.	Synonyms, Antonyms -----	3	"
Test 7.	Practical Judgment -----	3	"
Test 8.	Number Series -----	6	"
Test 9.	Analogies -----	6	"

E. takes care to have all the subjects proceed from test to test simultaneously, saying each time: "If you have forgotten how to do this test read the directions at the top of the page."

GROUP SKILL TEST

Nature and purpose. This is a group test of mechanical skill. It is to be given to the following individuals: (1) All who have failed to pass the Literacy Test, (2) all who have failed to make a satisfactory score in Group Examination *b*.^{*} Its purpose is to reduce the number of subjects who will have to be given the individual tests.

Materials (for 24 subjects):

- 24 sets Stenquist Construction Test, Single Series 1,
- 1 sample set with which to demonstrate,
- Individual Examination blank for each S.

Directions. Time allowed, 30 minutes.

1. Arrange boxes on tables far enough apart to discourage imitation and to give plenty of room for individual work. Where one room is used for this test alone, boxes may be left in position during the entire day's work. Be sure that boxes are placed so that the cover opens toward S. No talking should be allowed. Subjects will often inquire about missing or extra parts, even when none are missing or extra. However, each set should be carefully inspected each time it is corrected.

2. When all S's are seated, pass out the Individual Examination blanks and have the heading filled out at once. If S cannot write it is filled out for him. E says: "Keep the blank and put it inside the box when you are through. *Do not open the box until I tell you to.*"

3. E now takes his sample box, opens it before the class (with the cover toward himself) and says: "In each one of these boxes there are some common mechanical things that have all been taken apart." (E here takes out the parts of the bell, places them in the tray, showing that it has been disassembled.) "You are to take the parts and put them together as they ought to be; that is, you are to take the parts and put them together so that each thing will work perfectly."

"*Do not watch what anyone else does, but work absolutely by yourself. See that the hinges of the box are towards you; when opened in this position the cover forms a tray in which to work.*" (E here illustrates by appropriate gestures the way he is holding his box, with cover towards himself.)

^{*}The number who should go from Group Examination *b* to the Skill Test can not be stated, but it should be very small. Probably not more than 3 to 5 per cent of those who pass the Literacy Test will need to take the Skill Test.

"Do not break the parts. Everything goes together easily if you do it in the right way. Begin with Model A; then take Model B; then C; and so on (E points to A, B, C, etc., while explaining). Put each thing back in its proper place when you finish it. If you come to one that you cannot do in about 3 minutes, go on to the next. The person who gets the most things right gets the highest score. Ready—GO!"

4. E must be watchful to see that all begin with Model A, and that the completed models are returned to their proper places. When the test is completed, make sure that the record blank is enclosed. If any S finishes the test before time is up, E steps over to him and records on S's blank the number of minutes taken, and closes the box.

Scoring. On opening the box, E takes the enclosed record blank and scores as follows under F: Inspect Model A, and record its score value under A on the blank; then inspect Model B, and record its score value under B, etc. When E has recorded all the score values he goes to the next box, leaving his assistants (two) to take each model apart, while E records the scores for the next box, and so on. (The scoring can be done with great speed after a little practice. If necessary it is almost always possible to secure volunteer assistants from among the subjects who have just been tested. Being already familiar with the models, they can be trained in a few minutes properly to disassemble them. E should appoint one as inspector to *make sure that every model is disassembled, and all the parts in perfect order* before re-stacking the boxes. One E and two assistants can with practice score 25 boxes in 30 minutes.)

Score Values. The score value to be given for each degree of performance is shown in the cuts. Occasionally some model will be so assembled that it conforms to none of the values given; give the score value nearest the same. The various score values are quickly memorized. In those cases in which S finishes before the time is up, add one-quarter point for each gain-minute, *i. e.*, for each minute of the standard 30 minutes that remains after he has finished. In adding up the final score avoid fractions by taking the nearest whole number.

INDIVIDUAL EXAMINATION

It is assumed that the Group Examinations will have indicated for certain men the need or desirability of individual examination.

Time permitting, three groups—as classified by the Group Examinations—should be further examined by the Individual Method. These are (1) the lowest 3 to 5 per cent; (2) some of the highest; (3) certain of the irregular or atypical individuals.

The tests which are suggested for use in individual examinations are not arranged as a single scale. They may be used singly or in groups according to need.

If the subject has been examined by the group method, the result should indicate to the examiner lines of special inquiry in the individual examination.

For illiterates or those who have difficulties with English, tests A to G, designated as Group I, are especially recommended.

For those who because of poor records in the Group Examinations or for other reasons are suspected of being intellectually subnormal, tests K to P and in addition I and J, which together constitute Group II, or tests Q to V and in addition I and J (Group III) are recommended.

Subjects who because of peculiarities of behavior within or without the examining room are suspected of being psychotic may best be examined by the use of tests D, E, G, J, R, S and T. Irregularities or inequalities of performance are significant in these and other tests.

For the further examining of men who rank very high in the Group Examinations or who for other reasons are thought to be supernormal, tests A, C, E, I, J, K and P are especially suitable.

SUMMARY

Illiterate and Foreign	Tests A, B, C, D, E, F, G; with such supplementation as proves desirable. (Group I)
Intellectually subnormal	Tests K, L, M, N, O, P, I, J, (Group II) or Tests Q, R, S, T, U, V, I, J. (Group III)
Psychotic	Tests D, E, G, H, J, R, S.
Intellectually supernormal	Tests A, C, E, I, J, K, P.

The danger of "coaching" has been provided for in such tests as required it, by the preparation of several comparable "series" of materials. Usually there are five "series."

The examiner should choose for a given subject the "series" which is to be used (for example series 3) and should record the series number in the space provided after name of test on record blank. So far as feasible, tests of the same series number should be used throughout an individual examination.

N. B.—Time is to be scored throughout in seconds.

EXAMINERS' DIRECTIONS FOR INDIVIDUAL EXAMINATION

TEST A, CUBE CONSTRUCTION

Materials.—(1) a block of wood (model 1) 1 x 3 x 3 inches, painted a dark red on the four edges, not on the upper and lower surfaces, and cut to a depth of 2mm. so that it closely resembles a composite of 9 small cubes; (2) a block (model 2) like the one described under (1) except that in addition to the four edges one of the remaining surfaces is painted; (3) a 2-inch cube (model 3) unpainted and cut on the four surfaces so that it looks like a composite of 8 small cubes; (4) a 3-inch cube (model 4), unpainted, and so cut on the surfaces that it looks like a composite of 27 small cubes; (5) the cubes (1 inch) necessary for the construction of counterparts of the several models; (6) a wooden box 2 inches deep, 8 inches wide and 13 inches long, divided by wooden partitions into 8 equal compartments.

Directions.—(a) Present model 1 (in each case turn the model over and call attention to the top, bottom and sides as painted or unpainted) and the 9 cubes with which its counterpart may be constructed, and say: "Put these blocks together as quickly as you can, so they will look just like this (point to model 1). Ready—GO!" Discontinue the test if S fails on two successive parts.

Scoring.—With a stop-watch E measures in seconds the time required for the correct arranging of the cubes. He also counts the number of separate moves or acts (the minimum number is 9). Every time a block is put on the table or is placed in some position should be counted as a move. If S stops work before all the cubes are in their proper places, or before the time is up, he should be urged to continue; but time should be taken and errors counted when S puts last block in place. Each misplaced block, at the end, is counted as three moves. The presence or absence of a definite plan of work is to be recorded.

Time for work, 2 minutes.

(b) In the same way, present model 2 and the cubes necessary to construct its counterpart, saying to S: "Arrange these blocks as quickly as you can so they will look just like this (point to model 2). Ready—GO!"

Scoring.—Same as for (a).

Time for work, 2 minutes.

(c) Present model 3 and the eight cubes painted on three sides and say to S: "Now fit the blocks together so they will look just like this (point to model 3). Ready—GO!"

Scoring.—Same as for (a).

Time for work, 2 minutes.

(d) Present model 4 and the cubes from which its counterpart may be constructed. The 1-inch cubes should be classified according to the number of sides painted and arranged in four adjacent compartments of box (6) so that S may locate immediately any desired variety of cube. E says to S: "I want you to fit the blocks together so they will look just like this (take up model 5 and turn it over). You see it is not painted anywhere. You will find here (pointing to appropriate compartment of box) the unpainted block; here the ones painted on only one side, and so on). Do not take out any block till you are ready to use it. Ready—GO!"

Scoring.—Same as for (a). If S gives up before time is called, each misplaced block is to be counted as three moves. Time for work, 5 minutes.

(e) Present the 27 cubes again, properly distributed in the compartments of box (6), saying: "Now, fit the blocks together so that the whole of the outside (point to model 4) will be painted. Ready—GO!"

Scoring.—Same as for (d).

Time for work, 5 minutes.

N. B.—Examiners will ordinarily find it uneconomical of time to give more than parts (a), (b), and (e).

In scoring each part, the degree of planning should be scored: A (very good); B (fair); C (very poor).

TEST B, CLOCK TEST

Materials.—(1) Alarm clock; (2) Settings of clock.

Directions.—E selects from the five series of settings presented below one for use with a given S. He then proceeds with the test as follows:

Settings of clock

	SERIES									
	1		2		3		4		5	
a	6:18		3:11		10:34		11:04		4:02	
b	6:18	3:32	3:11	2:16	10:34	6:53	11:04	12:55	4:02	12:20
c	2:36	7:13	8:13	2:41	4:57	11:25	5:32	6:28	5:47	9:29
d	9:18	3:45	1:26	5:07	9:39	7:48	8:08	1:41	6:08	1:31
e	6:07	1:30	5:37	7:28	2:41	8:13	6:43	8:34	4:07	1:21

(a) With clock set as indicated in (a) first trial (series 1 for example) E says to S: "What time is it?" A second trial is given with the additional setting under (a).

Scoring.—Response, followed by a + or a — sign to indicate correctness or incorrectness.

(b) With clock properly set and *placed before S*, E says: "What time would it be if the two hands of the clock were to trade places, so that the large hand takes the place where the small one is and the small one takes the place where the large one is?"

Scoring.—Response. Consider correct (+) if error does not exceed 3 minutes.

Time limit, 1 minute. Record time in seconds for (c), (d), and (e).

(c) Same as (b), *except that clock face is not visible to S*.

(d) Same as (c).

(e) Same as (d).

TEST C, CUBE IMITATION (KNOX)

Materials.—(1) Four one-inch hardwood cubes fastened securely to a wooden base 1 inch wide by one-fourth inch thick by 12 inches long. The end cubes are 1 inch from the end of the base. The distance between the cubes is 2 inches. Both cubes and base are painted a dark red. The cubes are numbered, 1 to 4, from right to left. (2) A fifth cube of the same size unattached and similarly painted. (3) Ten imitation problems (a to j), as printed on record sheet.

Directions.—E places the cube board before S at a convenient distance from him and at right angles to his line of vision, with the numbered side of the cubes directed away from him and says: "Watch carefully and then do just what I do." E next with the fifth cube taps the attached cubes in a predetermined order, as for example in (a) 1-2-3-4, at the rate of one per second. He now lays the tapping cube down before S *midway between the second and the third cubes*, but nearer to S than to the cube board and says: "Do that." Before giving the second trial, E says: "I am going to repeat each one."

Give a second trial whether or not the first trial is correct.

Scoring.—Record the response as right (+) or wrong (—), using a screen to prevent S from seeing the score which E records.

(b-j) Similarly give parts (b) to (j) in order unless S fails in 5 successive parts. In that event discontinue the test.

TEST D, MAZE (PORTEUS)

Materials.—Four mazes, after Porteus, with slight modifications, printed on a separate four-page record sheet. On page 1 appears the maze for 10 years (Maze 10); on page 2 that for 11 years (Maze 11), and so on.

Directions.—Present to S maze 10, saying: "With your pencil start at S and mark the shortest way out, as quickly as you can. Do not cross any lines and do not turn back unless you have to. Ready—GO!"

If because of mistakes the lines become so numerous as to render the record confusing, E should give S a fresh maze sheet and have him continue his tracing of the path from the point of interruption. These record sheets should be numbered 1, 2, etc., in order.

Scoring.—Record the time in seconds (a) from start signal “Go” to first pencil mark (this is adjustment period, adj. time); (b) from beginning tracing at S to finish, or calling of time by E, (this is tracing time, Trac. time); (c) the total time, sum of (a) and (b). Record also the number of errors in tracing (an error is any movement of approximately a centimeter, or more, in a wrong direction).

Similarly present in turn mazes 11, 12, and 13, unless S fails on two successive parts of the test.

TEST E, FORM BOARD

Materials.—Form board number 3, designed by W. F. Dearborn.

Directions.—(a) Place the board before S, arranged as shown in figure 1, problem A (p. 33). Say to S: “Without making any more moves than you have to, change these blocks around so you can find a place for this extra square (point to square beside the board). Don’t have any blocks left over. Ready—GO!”

Scoring.—Record time in seconds from start to finish, and the number of moves.

Time for work, 2 minutes.

(b) Present the board arranged for problem B, saying: “I want you to change the blocks around so you can find places for *these two extra squares* (point to them). Ready—GO!”

Time for work, 3 minutes.

(c) Present the board arranged for problem C, saying: “I want you to change the blocks around so you can find places for *these four extra blocks*. Ready—GO!”

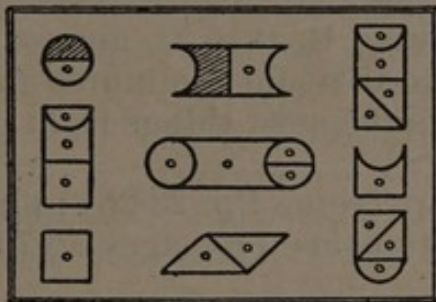
Time for work, 4 minutes.

(d) Present the board arranged for problem D, saying: “I want you to change the blocks around so you can find places for *these five extra blocks*. Ready—GO!”

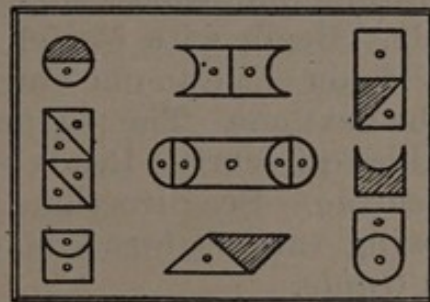
Time for work, 5 minutes.

FORM BOARD *3

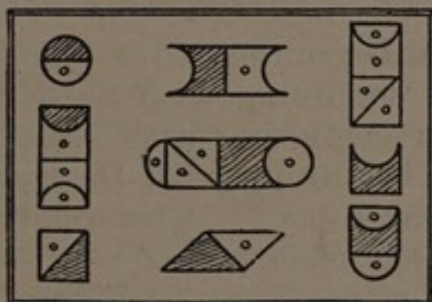
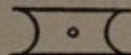
Shaded parts indicate unfilled places



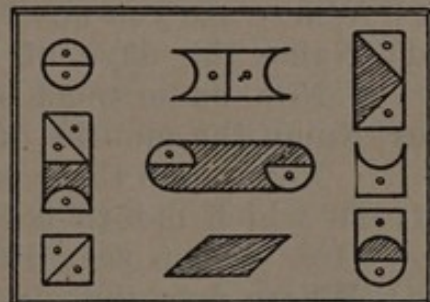
Problem A
Three separate movements



Problem B
Five separate movements



Problem C
Eight separate movements



Problem D
Nine separate movements

TEST F, CONSTRUCTION (STENQUIST)

Materials.—One set Stenquist Construction Test, Single Series 1.

Directions.—Place the open box before S, with cover open towards him. Say to him: "Take these mechanical things and put them together as they ought to be; that is, take the parts and put each thing together so that it will work perfectly. Begin with Model A, then take B, then C, and so on. But if you come to one you cannot do in about 3 minutes go on to the next one. The person who gets the most things right gets the highest score. Ready—GO!"

Scoring.—See directions for Group Tests (Pp. 23-25); plates showing various forms of construction are on pages 76-79 of this *Guide*.

TEST G, ORIENTATIONAL INFORMATION

Materials.—Set of ten questions printed below and listed in record blank a to j. They contain twenty items.

- (a) When were you born? Where? What is your race or nationality?
- (b) What day is it? What month? What day of the month? What year?
- (c) Where are you now?
- (d) Name the days of the week beginning with Sunday?
Now name them backward beginning with Saturday?
- (e) Name the months of the year beginning with January?
Now name them backward beginning with December?
- (f) In which month is "New Year's day?" Christmas?
- (g) How is leap year different from other years?
- (h) Where does the sun rise? Set?
- (i) If you face north what direction is to your right?
- (j) Name the seasons? What season has the longest days?
The shortest?

Directions.—This test is to be used for illiterates, those who have difficulty with English, or subjects who do very poorly in the group examination, the individual tests, or both. E should use his judgment about its appropriateness and probable value.

The test is recommended for subjects whose responses are irregular or otherwise peculiar and who may be psychotic.

Scoring.—So far as space and time permit response should be recorded; otherwise, record merely symbol for correct or incorrect response. Number of items correct may tentatively be used as measure of orientational information.

TEST H, ASSOCIATION

Materials.—Stopwatch and record blank.

Directions.—Say to S: "Now I am going to read to you a list of ordinary English words, one at a time, words like fox, tree, green and such. Each time I speak a word you should answer by saying the first word that comes into your mind on hearing it; the very first word it makes you think of. So if I should say fox, you might answer geese, or runs, or red, or tail, or animal, or any word that happened to come into your mind. If I should say tree, you might answer oak, or leaves, or green, or anything like that. Don't waste time hunting around for some especially good word. It doesn't make any difference whether I see any connection or not. Try a few to start with."

Then give sample words *fox, apple, fork, cure, quick, grass*, as far as necessary for illustration. Ordinarily one or two will be enough. As soon as S has the idea, proceed with the experimental series. Speak stimulus words distinctly and with falling inflection. Start stopwatch on beginning stimulus word and stop it on hearing the response.

Scoring.—Write each response legibly in the column provided for it, and immediately after it, in the same column, write the time in *fifths of a second*. Thus 1 2/5 seconds is written as 7. If no response is obtained in 30 seconds leave a blank and proceed to next stimulus word. If a response is not clearly heard, ask S to repeat, spell or otherwise indicate it clearly. If S misunderstands a stimulus word, note what was understood. A seeming irrelevance may have been caused in this way. If S asks to change a response previously given, the first is scored as actual response, but the second should be noted.

In recording the responses, note and mark tendencies to perseveration, sound association, or other responses of nonsense character. In large numbers, these have been found indicative of psychopathic conditions.

Reaction times being distributed, their median should not be over 15, (3 sec.). Other indications of abnormal condition are: (1) Many inordinately long reaction times not explained by unintelligibility of the stimulus word to S, and (2) predominance of "predicate" reactions with special value content, such as religion-uncertainty, work-distasteful, lion-frightful, and the like.

For numerical scoring of responses, use abridged Kent-Rosanoff frequency tables (supplied separately). The frequency of each response in a thousand cases is recorded from these tables in the column of the test blank provided for it. Score 5 for each response not found in abridged tables. If the median of these quantities is less than 20, abnormal mental processes are indicated.

TEST I, DIGITS BACKWARD

Materials.—Series of digits for group test 2 (p. 17), Forms A, B, etc.

Directions.—E selects a particular series of digits (as for instance those of Form A), designates it by its appropriate letter on the record blank, and proceeds with the test. Each group of digits is read distinctly at the rate of one per second and recorded in the space provided, as reproduced by S orally.

To S, E says: "I am going to read some numbers to you. I want you to listen carefully and then say them backward,—this way—if I say 3—5—1 you should say 1—5—3. Now try this one. Listen! 5—8—1_____Response_____ and this: 9—4—6_____Response_____

E now presents the several parts of the test in order until S has failed on four parts in succession or finished.

(a) E says to S: "Listen carefully. I am going to say four numbers. When I stop, you say them backward. Ready!"

E should state each time the number of digits to be given.

TEST J, VOCABULARY

Materials.—Accompanying five series of words.

Directions.—Place the list so that S may see the words and pronounce them if he wishes. If a word is pronounced incorrectly, E should give the correct pronunciation. Formula: "What does the word ----- mean?" If S hesitates or seems to think that he must give a formal definition, E says: "It doesn't matter how you say it. All I care for is to find out whether you know what the word means. Tell me the meaning any way you want to express it." S is encouraged as liberally as necessary.

Ordinarily it will not be necessary to secure responses to all of the forty words in a series, as some will obviously be too hard or too easy for the subject being tested. This is especially true in Series 1, the words of which have been graded accurately according to difficulty. In each series, however, the testing should be over a wide enough range to secure an accurate score.

Scoring.—Credit each response as + or —. Occasionally half credits may be given, but in general this should be avoided.

The score is + if the response shows that S knows at least one approximately correct meaning of the word. It is not necessary that the meaning given be the most common one. The form of definition is disregarded in computation of score, but for clinical purposes it is well to designate especially superior definitions by + +.

SERIES 1

1 lecture	11 forfeit	21 conscientious	31 gelatinous
2 guitar	12 majesty	22 philanthropy	32 milksop
3 scorch	13 shrewd	23 exaltation	33 declivity
4 bonfire	14 Mars	24 frustrate	34 irony
5 misuse	15 dilapidated	25 flaunt	35 incrustation
6 haste	16 hysterics	26 promontory	36 artless
7 puddle	17 priceless	27 infuse	37 laity
8 skill	18 tolerate	28 lotus	38 precipitancy
9 impolite	19 disproportionate	29 avarice	39 perfunctory
10 juggler	20 repose	30 embody	40 retroactive

SERIES 2

1 hurry	21 infringe
2 dizzy	22 congenial
3 spaniel	23 booty
4 decay	24 bogus
5 cautious	25 optimist
6 duel	26 interval
7 scoundrel	27 stockade
8 noble	28 rant
9 voluntary	29 forego
10 encourage	30 pallid
11 dike	31 fervid
12 navigable	32 maternal
13 overlook	33 decorous
14 jubilant	34 weird
15 embers	35 surf
16 conspicuous	36 swoon
17 perpetual	37 oblong
18 absorb	38 implacable
19 tragic	39 symposium
20 unfurl	40 retrograde

SERIES 3

1 forest	21 masterpiece
2 escape	22 effeminate
3 moist	23 petty
4 totter	24 scapegoat
5 rubbish	25 destitute
6 undertake	26 bewilder
7 jumble	27 stamina
8 cog	28 intermittent
9 genuine	29 disruption
10 repent	30 tenure
11 predict	31 corrode
12 assemble	32 franchise
13 capitulate	33 plastic
14 annoy	34 emulsion
15 contemplate	35 edict
16 bestow	36 vesture
17 cooper	37 tweed
18 swarthy	38 curator
19 hypocrite	39 extirpate
20 masculine	40 liturgy

SERIES 4

1 beneath	21 pestilence
2 strap	22 sagacity
3 holiday	23 oasis
4 trump	24 valid
5 transom	25 shroud
6 expel	26 aloof
7 enter	27 requisite
8 century	28 immaculate
9 wriggle	29 evade
10 adventurous	30 alloy
11 brewery	31 envoy
12 avalanche	32 gruesome
13 demonstrate	33 oscillate
14 descend	34 dissonant
15 rational	35 heinous
16 countless	36 hierarchy
17 lank	37 radiate
18 illiterate	38 elegy
19 outwit	39 labial
20 emergency	40 vista

SERIES 5

1 bonnet	21 hostler
2 vaccinate	22 prostrate
3 echo	23 discreet
4 solve	24 clump
5 intoxicated	25 hull
6 abundant	26 trellis
7 blemish	27 smolder
8 republic	28 pedestrian
9 enormous	29 opaque
10 cartoon	30 deluge
11 jury	31 aquatic
12 endure	32 heresy
13 gullible	33 paternal
14 ascend	34 citron
15 transparent	35 missile
16 courtesy	36 porous
17 melancholy	37 virile
18 submit	38 amulet
19 humorist	39 laconic
20 terminate	40 tendril

TEST K, LETTER LINE

Materials.—Two pages of letters, (a) and (b), each containing five series, and the key to the letter test.

Directions.—(a) The examiner points each time to the group of letters to be arranged. While giving the directions for trial 1, he points to I and M and says: "You see these letters. Look at them carefully. If they were made out of cord or tape, the letter I would take a much shorter piece of tape than the M. You see what I mean. Arrange the letters according to the total length of cord or tape needed. First write the letter I, because that would take the shortest piece of tape, then the letter that would take the next shortest piece, and so on. Take plenty of time, and use your best judgment."

E hands S a piece of paper and a pencil. While S does part (b), E copies S's arrangement of (a) in space provided on blank, and so on.

(b) "Now do the same with these letters."

If more than one letter is misplaced in two successive trials, the test is discontinued. E may give (a) or (b) of other series if he wishes to test S further.

Scoring.—Record time and errors. Time allowed for work on each part, 2 minutes.

LETTER LINE, PART (a)

Series 1

(a) Z I M T N

Series 2

(a) V M L E I

Series 3

(a) M I Y X H

Series 4

(a) V I T M X

Series 5

(a) N I F M L

LETTER LINE, PART (b)

Series 1

(b) Y I M H V X

Series 2

(b) Z T K M N I

Series 3

(b) L M I A K F

Series 4

(b) E Y Z I M N

Series 5

(b) H T M Z I F

KEY TO LETTER LINE

Series 1

(a) I T Z N M

(b) I Y V X H M

Series 2

(a) I L V E M

(b) I T Z K N M

Series 3

(a) I Y X H M

(b) I L F A K M

Series 4

(a) I T V X M

(b) I Y Z E N M

Series 5

(a) I L F N M

(b) I T F Z H M

TEST L, DISARRANGED SENTENCES

Materials.—Dissected sentences given below.

Directions.—(a) E shows S set (a) of series selected for use (covering the others), and says: "I am going to show you some words. You will have one minute to put these words in their proper order so that they will make a good sentence; make good sense. Use all the words but no others."

If the subject does not give a logical arrangement of the first sentence within one minute, read the sentence off correctly for him, pointing to each word as it is spoken.

Scoring.—Record the time. Write the first letter of each word as given by S, and mark the response + or —.

Series 1

(a) warm winter in we clothes wear

(b) trees roots have their ground the in

(c) skillful makes much careful become practice one

Series 2

- (a) feet wear to are shoes the on
- (b) does angry not to it get pay
- (c) summer makes in warm grow sunshine plants

Series 3

- (a) hard high to are mountains climb
- (b) get grow they as children taller older
- (c) plants becomes the when wither dry ground

Series 4

- (a) honey flowers gather bees the from
- (b) horse elephant is smaller a than an
- (c) steam it into when changes boils water

Series 5

- (a) times mistakes make men all at
- (b) a than is automobile an slower horse
- (c) snow change into cold often winds rain

TEST M, ABSURDITIES

Directions.—E says to S: "I am going to read something which has something foolish or funny in it, some nonsense. Listen and tell me what is foolish about it." Then E reads in order, somewhat slowly and in a matter-of-fact voice, the ten absurdities of one of the five series. After each of the first three or four E says: "What was foolish about that?" If S is silent for 15 seconds, E repeats: "What was foolish about that?" Then if there is no response in 15 seconds more, E goes to next. If S fails on the first, that one is read again. The others are not to be read a second time unless E requests it.

If it is not clear from the response whether the absurdity has been detected, E says: "What do you mean?" Only this general form of question may be employed. Questioning which might suggest the right answer must be carefully avoided.

Scoring.—Each of the ten items is scored + or —; no half credits. Plus means that the essential point in the absurdity has been detected.

SERIES 1

a. The poor sick man lay flat on his back, entirely speechless, and all his cry was, "Water! Water!"

b. A man said, "I know a road from my house to the city which is down hill all the way to the city and down hill all the way back home."

c. The fireman hurried to the burning house, got his fire hose ready, and after smoking a mild cigar put out the fire.

d. The commissioners have decided to build a new jail out of the materials of the old jail, but they are going to keep the prisoners in the old jail until the new one is finished.

e. I saw a nicely dressed gentleman on the street. He had his hands in his pockets and was swinging a cane.

f. In an old grave yard in Virginia they have discovered a small skull which is believed to have been that of George Washington when he was about ten years old.

g. A tramp found ten dollars. He went to a store and bought a hat for eight dollars and an overcoat for two dollars.

h. John was saddling his horse one day and thoughtlessly put the saddle on backwards. When told of his mistake, he said, "How do you know which direction I am going to ride?"

i. A mistake is much worse than a lie, for all people make mistakes and only liars tell lies.

j. The wind blew strong from the west and carried the smoke over the roof of the house straight toward the setting sun.

SERIES 2

a. A man had smallpox twice. The first time it killed him, but the second time he got well quickly.

b. A bicycle rider being thrown from his bicycle in an accident struck his head against a stone and was instantly killed. They picked him up and carried him to the hospital, and they do not think he will get well again.

c. The poor sick man lay flat on his back six weeks in the month of August and suffered terribly.

d. While walking backwards the man struck his forehead against a stone wall and was knocked insensible.

e. Though armed with nothing but his pocket knife he killed the robber with a single shot.

f. A man said to his friend, "I hope you will live to eat the chickens that scratch sand on your grave."

g. Just before sunset we sat in the shade of a tall tree and amused ourselves by watching the shadows as they gradually grew shorter and shorter.

h. A man said he liked the moon better than the sun, because the moon shines at night when we need the light while the sun shines in the day when it is already light.

i. When the price of food is high, wages ought to be low in order to make things fair for everybody.

j. There was once a man so strong that he could lift himself high off the ground by pulling up on his boot straps.

SERIES 3

a. One day we came in sight of several icebergs that had been entirely melted by the warmth of the Gulf Stream.

b. Yesterday the police found the body of a girl cut into eighteen pieces and they believe that she killed herself.

c. A father wrote to his son, "I enclose ten dollars. If you do not receive this letter, please send me a telegram."

d. A man wished to dig a hole in which to bury some rubbish. He could not decide what to do with the dirt from the hole. A friend suggested that he dig the hole large enough to hold the dirt too.

e. At the cross-roads was a guidepost with the following directions, "Philadelphia $3\frac{1}{2}$ miles. If you cannot read, inquire at the blacksmith shop."

f. The reason why winter is colder than summer is because in winter there is a large amount of snow while in summer there are only warm rains.

g. Walter came to school tardy only one day last year, and that was Christmas morning.

h. With an umbrella under her arm and a purse in her right hand the daintily dressed woman walked slowly along the road in a heavy rain.

i. When wages are low, laborers should get their pay in gold rather than in silver, because gold, being more precious than silver, will buy more food.

j. It is safer to travel in an automobile than on a train, because a train wreck may kill a hundred people while an automobile wreck never kills more than a few.

SERIES 4

a. Walter now has to write with his *left* hand because two years ago he lost both his arms in an accident.

b. An engineer said that the more cars he had on his train the faster he could go.

c. A well-known railroad had its last accident five years ago and since that time it has killed only one person in a collision.

d. They found the young man locked in the room with his hands and feet tied behind him. They think that he locked himself in.

e. I read in a paper that they fired two shots at a man. The first shot killed him, but the second did not.

f. An old lady says that God is very good, because He always makes the largest rivers flow past the largest cities.

g. An Irishman called at the postoffice to get his mail. "What is your name?" said the Postmaster. "Why?" said the Irishman, "you will find my name on the envelope."

h. A kind hearted man who was taking a heavy bag of grain to town on his horse, sat on his horse and lifted the bag to his own shoulder in order to make the load easier for his horse.

i. A gentleman fell from his carriage and broke his neck, but received no further damage.

j. In some states there are laws to prevent a man from marrying his widow's sister.

SERIES 5

a. It has been found that the last car of a train is damaged most in case of accident. It therefore seems best to leave off the last car.

b. There was a railroad accident yesterday, but it was not very serious. Only forty-eight people were killed.

c. A wheel came off of Frank's automobile and as he could not get the wheel back on he had to run his automobile to the shop for repairs.

d. A boy who was asked where Mr. Smith lived, said, "The first house you come to is a barn. The next is a haystack. The next is Mr. Smith's."

e. The storm which began yesterday has continued three days without a break.

f. Henry's dog has three puppies, so when Henry builds a little house for them he will have to make one large door for the mother dog and three small doors for the three puppies.

g. The judge said to the prisoner, "You are to be hanged, and I hope it will be a warning to you."

h. Frank and his sister brush their teeth every morning. Once Frank made a mistake and brushed his teeth with his sister's brush. This made his sister very angry, and she got even with him by brushing *her* teeth with *his* brush.

i. The main difference between a president and a king is that a king sits on a throne while a president sits on a chair.

j. They began the meeting at two o'clock, but they set the hands of the clock back so that the meeting might surely close before sunset.

TEST N, CONTROLLED ASSOCIATION (RIMES)

Materials.—List of words, given below.

Directions.—(a) E says: "You know what a rime is. 'Hat,' 'rat,' and 'cat' rime because they sound alike. 'Unite,' 'light,' and 'anthracite' also rime with one another because they all end in 'ite.' (Pronounce.) Now I'll give you a word and you will have one minute to tell me as many words as you can—short words or long words—that rime with it. The word is—E gives word (a) of series selected for use.—Tell me all the words you can think of that rime with -----."

Scoring.—Write down as many of the responses as possible and record the number of right and wrong responses given within the time limit.

Time of work, 1 minute for each part.

(b) "Tell me all the words you can think of that rime with -----" E gives word (b) of same series, taking care to stress the last syllable only; *e. g.*, permit'.

Series 1	Series 2	Series 3	Series 4	Series 5
(a) stone	(a) load	(a) pan	(a) fear	(a) pour
(b) permit	(b) without	(b) until	(b) unwrap	(b) combine
(c) resist	(c) receive	(c) desire	(c) began	(c) severe

TEST O, LIKENESSES AND DIFFERENCES

Directions.—E selects one of the five series and gives its ten items in the order in which they come in the "Guide." When a difference is asked for, the formula is: "What is the difference between ----- and -----?" When a likeness is asked for, the formula is: "In what way are ----- and ----- alike?"

If a likeness is given when a difference is asked for (or vice versa), E says: "No, tell me the *difference* between ----- and -----." (Or, "Tell me how ----- and ----- are *alike*.") Only in such cases is a second trial given, but a correction spontaneously offered is accepted. If the meaning of a response is not clear, E says: "What do you mean?" No other questioning is permissible. If S hesitates to attempt a response he should be encouraged.

Scoring.—Each item should be scored + or —. Half credits are not allowed. For items a to h of each series, any real likeness (or difference) is satisfactory; it need not be the most essential one. The standard of scoring corresponds to that employed in current Binet procedure.

Item i is passed only if an essential likeness is given, though it need not be elegantly expressed. The essential similarities called for in the i items are considered to be as follows:

coal—*a waterfall*; sources of power, heat, or electricity.

addition—*multiplication*; multiplication a short method of addition; both accomplish the same thing, etc.

eye—*ear*; both sense organs, avenues of information, etc.

egg—*seed*; beginning of development; or a sex product.

farm—*factory*; places where things are produced.

The scoring for item j is analogous to that for Binet's test of giving differences between abstract words.

For *president*—*king*, any one of the three main differences (power accession, tenure) is acceptable.

When possible, the response should be recorded, in abbreviated form. When a response cannot be graded definitely as + or —, E should say: "In what *other* way are ----- and ----- alike (different)."

If a difference is given when a likeness is asked for, E writes (d). If a likeness is given when a difference is asked for, this is indicated by (l).

N. B.—Attention is called to the possible significance of difficulty caused S by the shift of Aufgabe from giving likenesses to giving differences, or vice versa.

SERIES 1

(*N. B.*—In all the series differences are indicated by an *.)

- *a. What is the difference between a cannon and a rifle?
- b. In what way are a hat and a coat alike?
- c. In what way are a hoe and a razor alike?
- *d. What is the difference between a hatchet and a hammer?
- e. In what way are a rose, a potato, and a tree alike?
- f. In what way are a table, a chair, and a bed alike?
- *g. What is the difference between a president and a king?
- h. In what way are a cat, a snake, a bird, and a fish alike?
- i. In what way are the eye and the ear alike?
- *j. What is the difference between character and reputation?

SERIES 2

- *a. plate—saucer
- b. pen—pencil
- c. animal—plant
- *d. the sun—the moon
- e. snake—cow—sparrow
- f. lamb—calf—child
- *g. lawyer—judge
- h. grass—cotton—tree—
thistle
- i. coal—a waterfall
- *j. mistake—lie

SERIES 3

- *a. cat—hen
- b. watch—clock
- c. mosquito—sparrow
- *d. nail—screw
- e. wool—cotton—leather
- f. spider—fly—elephant
- *g. rascal—thief
- h. ship—bicycle—automobile
—train
- i. egg—seed
- *j. anger—rage

SERIES 4

- *a. knife—fork
- b. needle—pin
- c. steam—electricity
- *d. bucket—basket
- e. book—teacher—newspaper
- f. physician—surgeon—
dentist
- *g. surgeon—ordinary physi-
cian
- h. dog—tree—spider—eagle
- i. farm—factory
- *j. laziness—idleness

SERIES 5

- *a. hat—cap
- b. cigar—cigarette
- c. brick—stone
- *d. river—lake
- e. knife blade—penny—piece
of wire
- f. scissors—knife—axe
- *g. man—gentleman
- h. water—blood—oil—milk
- i. addition—multiplication
- *j. poverty—misery

TEST P, INGENUITY

Directions.—The formula is as follows: "A soldier must measure out exactly 3 ounces of medicine for a sick comrade. He has only an 8-ounce bottle and a 5-ounce bottle to do it with. Show how he can use these two bottles to get just the right dose of 3 ounces without any guessing. Begin by filling the 8-ounce bottle." E writes 8—5—3 on a piece of paper, leaves it in sight of S, and says: "Remember you have an 8-ounce bottle and a 5-ounce bottle to get exactly 3 ounces. Tell me how you would do it and tell me everything you do." Directions are not to be repeated. S is not allowed to figure with a pencil. The solution must be given orally.

The above illustration of the formula is for problem a of series 1. The other *a-problems* are stated in the same way, using the appropriate numbers. In giving the *b-problems* and *c-problems* the formula is abbreviated to: "This time you have a 5-ounce bottle and a 7-ounce bottle to get 3 ounces; begin by filling the 5-ounce bottle."

One series of three problems should be given to each S. The problems are always to be presented in the order a, b, c.

Time allowed is 2 minutes for the *a-problems* and 5 minutes each for the *b* and *c-problems*. Work on the *b* and *c-problems* is discontinued after 2 minutes if S has not completed the third step in the solution. When any problem has been failed the experiment is discontinued.

The solution must be unaided other than by general encouragement. If S asks if the bottles are marked, E should say "No." If S asks whether it is permissible to pour from one bottle to another, the answer is, "Yes."

Scoring.—E records all the steps made by S, or as nearly all as possible. The recording should be done in the notation employed in the problem lists below. Thus, for *problem-a* the steps are f8 (fill 8); St5 (pour from 8 to 5); e5 (empty 5). The steps taken are *not* to be *numbered* in the record blank; they are merely recorded in order in the above notation.

N. B. Examiner.—Observe that one of the measures must be filled or emptied at each step in a correct solution. It will be noted that each of the problems as written below gives first the measure to be filled first, then the other measure, and then the quantity to be obtained. Thus 8—5—3 means an 8-ounce bottle and a 5-ounce bottle to get 3 ounces; the 8-ounce bottle to be filled first.

INGENUITY PROBLEMS

SERIES 1

NO.	PROBLEMS	STEPS							SOLUTION
		1	2	3	4	5	6	7	
1a	8-5-3	f8	8t5	e5	---	--	---	--	3 in 8
1b	5-7-3	f5	5t7	f5	5t7	e7	---	--	3 in 5
1c	9-7-4	f9	9t7	e7	9t7	f9	9t7	e7	4 in 9

SERIES 2

2a	7-4-3	f7	7t4	e4	---	--	---	--	3 in 7
2b	8-5-11	f8	8t5	e5	8t5	f8	---	--	$8 + 3 = 11$
2c	4-9-3	f4	4t9	f4	4t9	f4	4t9	e9	3 in 4

SERIES 3

3a	9-4-5	f9	9t4	e4	---	--	---	--	5 in 9
3b	7-4-10	f7	7t4	e4	7t4	f7	---	--	$7 + 3 = 10$
3c	5-8-7	f5	5t8	f5	5t8	e8	5t8	f5	$2 + 5 = 7$

SERIES 4

4a	9-5-4	f9	9t5	e5	---	--	---	--	4 in 9
4b	8-7-9	f8	8t7	e7	8t7	f8	---	--	$8 + 1 = 9$
4c	6-7-11	f6	6t7	f6	6t7	e7	6t7	f6	$6 + 5 = 11$

SERIES 5

5a	9-7-2	f9	9t7	e7	---	--	---	--	2 in 9
5b	6-8-4	f6	6t8	f6	6t8	e8	---	--	4 in 6
5c	7-5-4	f7	7t5	e5	7t5	f7	7t5	e5	4 in 7

TEST Q, MEMORY FOR DESIGNS

Materials.—Use the four plates of designs on pp. 82 to 88. E provides S with pencil and paper beforehand.

Directions.—Formula for a and b: "I am going to show you a drawing. You will have just ten seconds to look at it, then I will take it away and let you draw it from memory. Don't begin till I say 'go.'" Formula for c and d: "This time I will show you *two* drawings. You will have only ten seconds to look at them, then I will take them away and you are to draw them *both* from memory."*

Before exposing the designs, E says: "Ready. Look closely." When designs are removed, E says, "GO."

Designs are exposed with greatest length of page horizontal, and with front of "Guide" toward E.

Scoring.—The possible scores for each of the four items are: full credit, half credit, failure. The standards for these scores correspond to current scoring of the Binet design. Full credit is given only if the essential plan of the design has been grasped and reproduced. A slight error reduces the credit to half. Half credit is given for c and d when one of the two parts is reproduced correctly and the other half correctly.

Full credit is given for d only in case: (1) Left design is drawn with four parts and the right with six; (2) the right design is made longer than the left; (3) the divisions of the left design are made equal and those of the right progressively smaller from left to right.

*N. B.—Begin with design a, on p. 88, and give in the order a, b, c, d.

TEST R, LOGICAL MEMORY

Materials.—(1) Paragraphs designated as Passage 1, 2, 3, etc., on pages 59 to 63 in "The Examiner's Guide;" (2) tracing paper.

Directions.—Having selected a passage for use and recorded its number in the place provided on the record blank, E places the passage (in "Guide") before S, and says: "Read this out loud. *Try to remember it as well as you can.* No matter whether you remember the exact words or not."

The time of reading is to be measured with a stopwatch. Errors (omissions or changes) and defective articulations are to be recorded. Mistakes which are corrected are not counted.

As soon as S has finished reading, E takes the "Guide," places a piece of tracing paper over the barred copy of the passage and says: "Now tell me what you read." E should indicate each idea recalled by marking it on the tracing paper. If S pauses for 15 seconds, E says: "What else?" Allow credit for responses begun during the next 15 seconds, after which discontinue the test. E should record all false memories or tendencies to fabrication.

Time for recall, 2 minutes.

The American Liner New York struck a mine near Liverpool Monday evening. In spite of a blinding snowstorm and darkness, the sixty passengers, including women, were all rescued, though the boats were tossed about like corks in the heavy sea. They were brought into port the next day by a British steamer.

LOGICAL MEMORY

PASSAGE 1

The American | Liner | New York | struck a mine | near
Liverpool | Monday evening. | In spite of a blinding snow-
storm | and darkness, | the sixty passengers, | including wo-
men, | were all rescued, | though the boats | were tossed about |
like corks | in the heavy sea. | They were brought | into
port | the next day | by a British | steamer. |

The children of Washington recently gave \$2000 for the school playgrounds of the city. They got this money by collecting old newspapers from their homes and public places, putting them in bales and selling them. They gathered over a hundred tons of papers. This money will be used to improve the playgrounds and buy athletic goods for them.

PASSAGE 2

The children of Washington recently gave \$2000 for the school playgrounds of the city. They got this money by collecting old newspapers from their homes and public places, putting them in bales and selling them. They gathered over a hundred tons of papers. This money will be used to improve the playgrounds and buy athletic goods for them.

Dogs are trained to find the wounded in war time. Police dogs are also trained to rescue drowning people. Instead of running down to the water and striking out, they are taught to make a flying leap, by which they save many swimming strokes and valuable seconds of time. The European sheep dog makes the best police dog.

PASSAGE 3

Dogs | are trained | to find | the wounded | in war time. |
Police dogs | are also trained | to rescue | drowning people. |
Instead of running down to the water | and striking out, |
they are taught | to make a flying leap, | by which they save |
many swimming strokes | and valuable | seconds of time. | The
European | sheep dog | makes the best police dog. |

Many school children in northern France were killed or fatally hurt, and others seriously injured when a shell wrecked the school-house in their village. The children were thrown down a hillside and across a ravine a long distance from the school-house. Only two children escaped uninjured.

PASSAGE 4

Many | school children | in northern | France | were killed |
or fatally hurt, | and others seriously injured | when a shell |
wrecked | the school-house | in their village. | The children |
were thrown | down a hillside | and across | a ravine | a long
distance | from the school-house. | Only two children | escaped
uninjured. |

Anna Thompson of South Boston, employed as a scrub woman in an office building, reported at the City Hall Station that she had been held up on State Street the night before and robbed of about five dollars. She had four little children and the rent was due. The officers made up a purse for her.

PASSAGE 5

Anna Thompson | of South Boston, | employed as a scrub woman | in an office building, | reported | at the City Hall | Station | that she had been held up | on State Street | the night before | and robbed | of about five dollars. | She had four | little children | and the rent | was due. | The officers | made up | a purse | for her. |

TEST S, COMPREHENSION TEST

Directions.—Say to S: "I am now going to ask you some questions. Listen closely, and answer them as well as you can." Then give the five questions of the series chosen for use slowly and distinctly, with expression. S may be given such encouragement to reply as the occasion demands, but E must avoid suggesting correct answers. If the response is too vague, question further in such terms as, "What do you mean?" "What makes it so-and-so?" and the like. Questions may be reread once if S requests it. Effort should be made to secure a response which can be scored as + or —.

The purpose of the test is to indicate the *reasonableness* of S's mental processes. Disturbances of thought processes may be topical, and many questions fail to bring them out whereas others do. In examining a suspected psychotic, E should give, in addition to one of the regular series, selections from other series, using such questions as in his judgment are best suited to bring out the suspected abnormality.

Scoring.—The scoring for each item remains to be worked out. For this reason it is important that E record enough of each response to give its essential content. This will make possible the later alteration of scores.

Effort should be made to score each response as + or — according to some definite standard. Current standards for scoring the Binet "difficult comprehension" questions will serve as a point of departure. Absurd responses should be especially noted.

Time for response, 1 minute for each question. If the subject requests a second reading, the time is measured from the end of the second reading.

SERIES 1

- a. If you have a bucket full of eggs in one hand and an empty basket in the other, and a man offers to give you some sweet cider, how would you get it home?
- b. Why is it better to judge a man by what he does than by what he says?
- c. Why should people have to pay taxes? •
- d. Why are people who are born deaf usually dumb?
- e. Why does land in the city cost more than land in the country?

SERIES 2

- a. If a child runs out in front of an automobile and is run over by it, what should the driver do?
- b. If you picked up a pocket-book on the road with a hundred dollars in it, what would you do to find the owner?
- c. Which would you forgive more quickly; a man who did you an injury when he was angry, or a man who did you an injury when he wasn't angry?
- d. Why is it better to pay bills by check than by cash?
- e. Why are unmarried men preferred for military service?

SERIES 3

- a. What should you do if you find a sealed, stamped and addressed envelope in the street?
- b. What should you do with a two-year-old child that you find lost on a city street?
- c. What should you say if someone asks your opinion about somebody you don't know very well?
- d. Why is it often a good thing for a man to have his life insured?
- e. Why do banks usually prefer married men for cashiers?

SERIES 4

- a. You are hauling a load of lumber; the horses get stuck in the mud, and there is no help to be had. What should you do?
- b. Your mother is sick and has no money. You earn a dollar and are taking it to her. On the way you meet a child who cries and wants a nickel for some candy. What should you do?
- c. Why has New York become the largest city in America?
- d. Why is a man who borrows money willing to pay interest on it?
- e. Why should women and children be saved first in a shipwreck?

SERIES 5

- a. What should you do if your neighbor dumps rubbish in your dooryard?
- b. Why is electric light better than gaslight?
- c. You are driving along a lonely road with a wagon load of people, and you meet a man badly hurt lying in the road. Your wagon cannot hold any more, and no other help may come for hours. What should you do?
- d. Why should people have to get a license to get married?
- e. A man is 60 years old and has nobody to keep but himself. He has ten thousand dollars. What should he do with it?

TEST T, SENTENCE CONSTRUCTION (THREE WORDS)

Materials.—Sets of three words, given below.

Directions.—(a) E says: "Now, I am going to give you three words. Join them with other words in any order so as to make a sentence that has all three words in it. The three words are (E reads set (a) of series selected for use). Go ahead and make up a sentence that has all three words in it."

N. B. Examiner.—Do not show the words or illustrate what a sentence is. If the subject does not begin to respond within a minute, repeat the directions, using set (b). If still there is no response within a minute, discontinue the test.

Scoring.—Write down what the subject says and score the test + or —.

(b) E says: "Now make up a sentence that has these three words in it." (E reads set (b) of series being used.)

(c) Same procedure as for (b), using set (c).

SERIES 1

- (a) grocer, sugar, scales
- (b) thread, cloth, button
- (c) pleasure, theatre, people

SERIES 2

- (a) forest, gun, hunter
- (b) parade, crowd, circus
- (c) success, books, information

SERIES 3

- (a) accident, train, night
- (b) water, fish, animal
- (c) wealth, miser, friends

SERIES 4

- (a) woman, ribbon, hat
- (b) cloud, light, moon
- (c) poverty, spendthrift, fortune

SERIES 5

- (a) plants, root, ground
- (b) newspaper, fire, city
- (c) business, invention, machine

TEST U, ARITHMETICAL REASONING

Say to S: "If a man buys ----- cents worth of postage stamps at the post office and pays a (dime, quarter, half-dollar, dollar), how much change does he get back?"

SERIES OF PROBLEMS

Series	a	b	c	d
1-----	6 from 10;	8 from 25;	14 from 50;	53 from 100
2-----	4 from 10;	9 from 25;	13 from 50;	36 from 100
3-----	3 from 10;	7 from 25;	16 from 50;	27 from 100
4-----	7 from 10;	6 from 25;	12 from 50;	61 from 100
5-----	8 from 10;	4 from 25;	17 from 50;	43 from 100

Time for each problem, 15 seconds.

One series of these simple problems is to be given. If they are readily solved, S should be tested further with one of the following problems:

1e—If a man's salary is \$20 a week and he spends \$14 a week, how long will it take him to save \$300?

2e—If 2 pencils cost 5 cents, how many pencils can you buy for 50 cents?

3e—At 15 cents a *yard*, how much will 7 *feet* of cloth cost?

4e—6 men can dig a trench in 3 days. How many men will it take to dig it in half a day?

5e—If a man buys 2 cigars at 7 cents each and a pipe for 65 cents, how much change should he get from a two-dollar bill?

Time for each problem, 1 minute.

TEST V, CODE LEARNING

Materials.—Accompanying sample code and five test codes, designated by numbers.

Directions.—E shows S the sample code, saying: "These lines (illustrating with pencil drawings of symbols) are used to represent letters in a kind of secret writing." E now shows how the word *son* may be written with the code symbols. Then he says: "Now I am going to show you a form in which different letters are used. Study it carefully until I take it away." E presents one of the five codes for 20 seconds. He then places before S a sheet of paper on which the letters from e to m (in alphabetical order) have been written in advance, and says: "Put the lines which stand for it around each letter."

N. B.—E must not allow S to redraw the code figure from memory.

Scoring.—On the record blank E enters a symbol, + or —, according to whether the response is correct or incorrect. The total number of correct responses is also to be recorded.

Time for work in writing the symbols, 2 minutes.

SAMPLE CODE

p	w	q
t	o	n
u	r	s

s	o	n

CODE 1

h	g	m
i	f	l
j	e	k

CODE 2

j	k	e
i	l	f
h	m	g

CODE 3

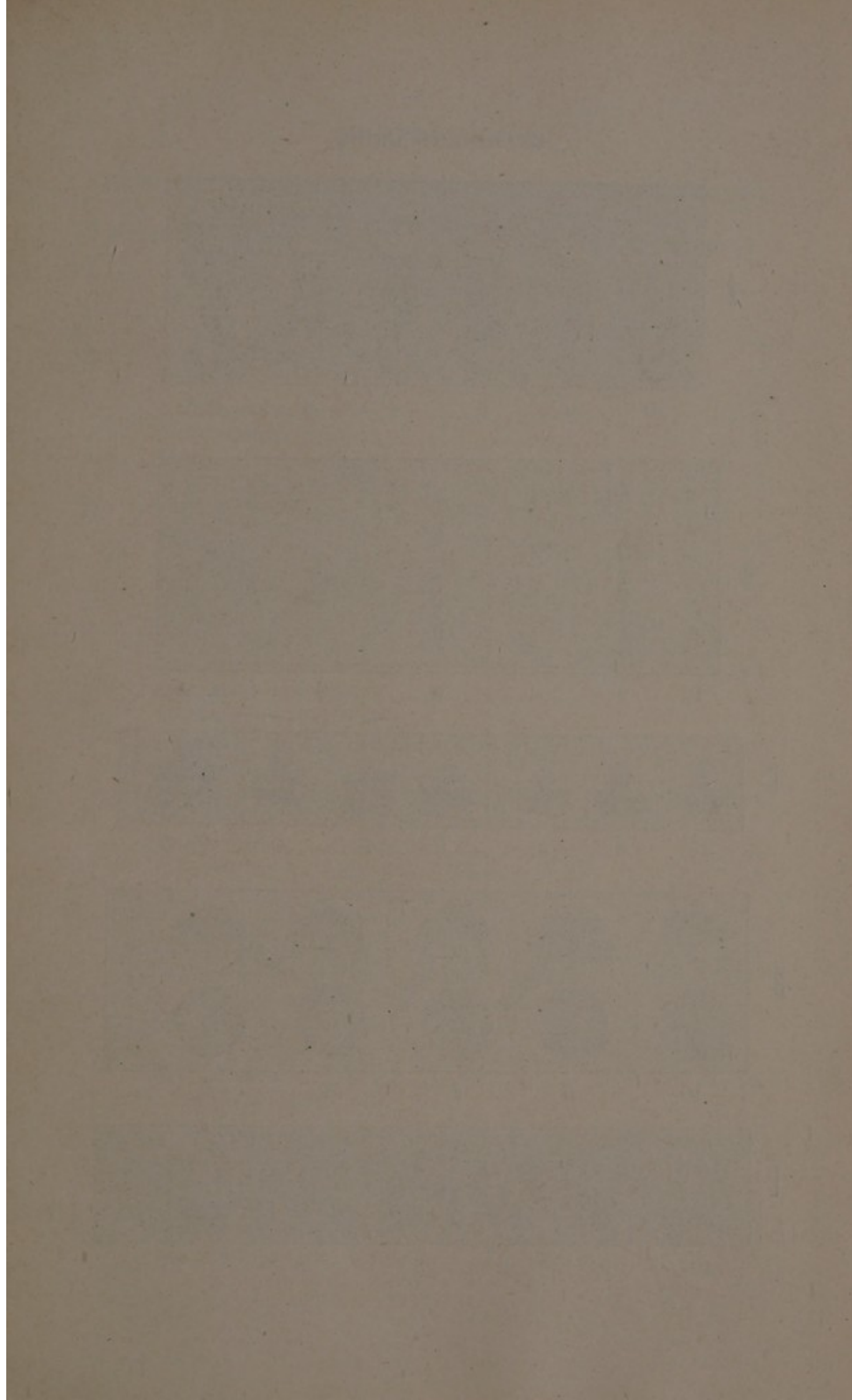
k	e	j
l	f	i
m	g	h

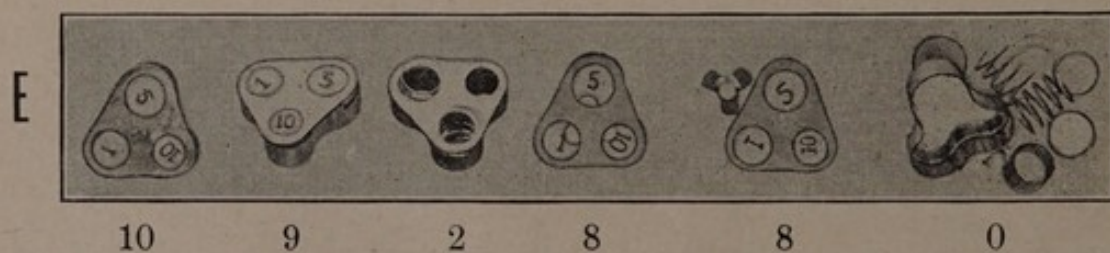
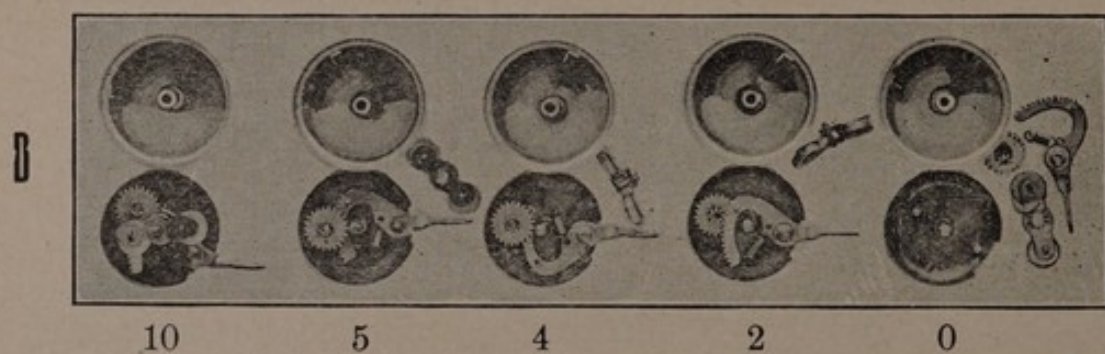
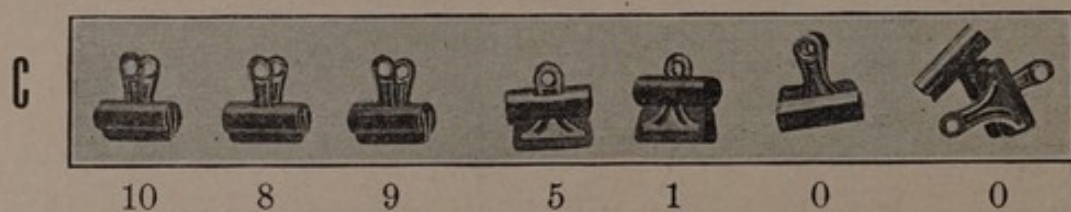
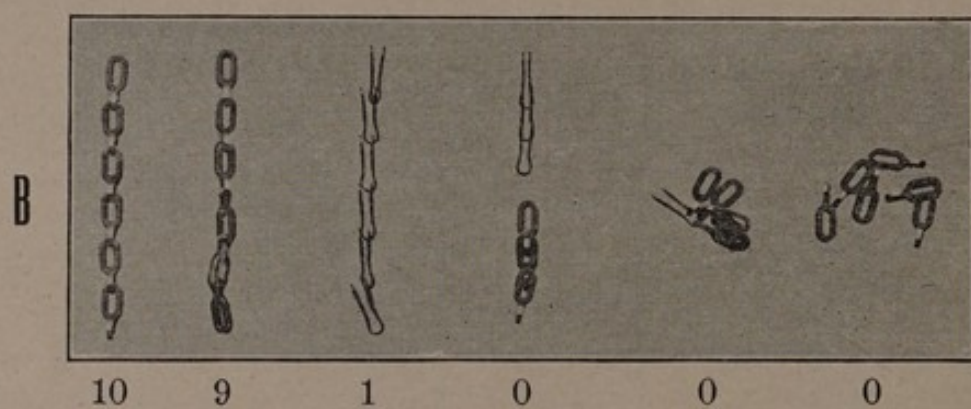
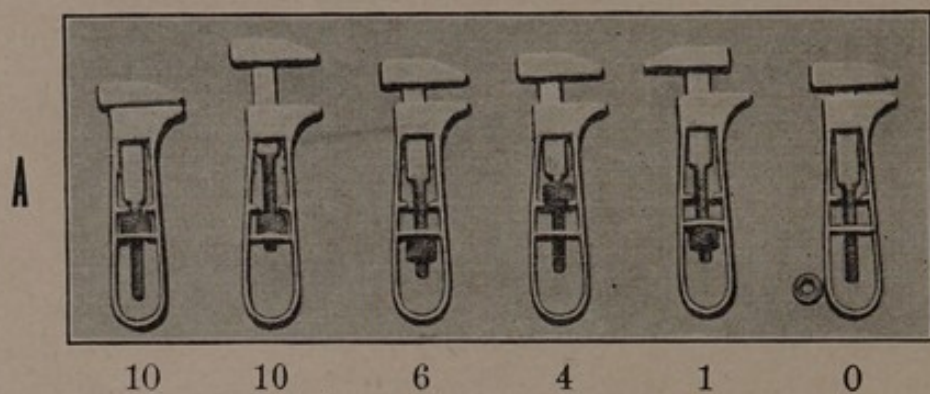
CODE 4

k	l	m
e	f	g
j	i	h

CODE 5

j	i	h
k	l	m
e	f	g





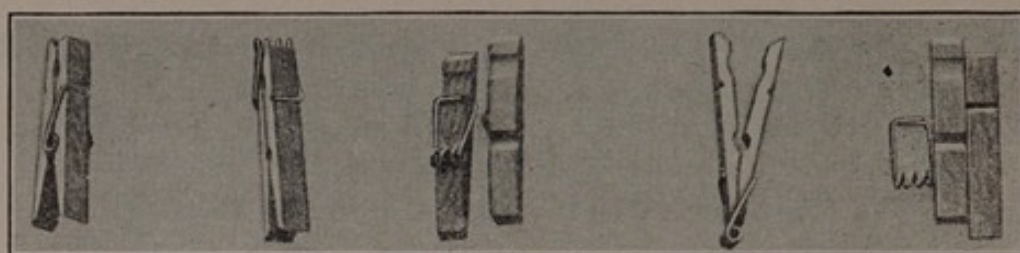
STENQUIST CONSTRUCTION TEST, SINGLE SERIES I

STANDARD SCORE VALUES STANDARD TIME, 30 MINUTES

(ALL scores on a scale of 0 to 10)

		<i>Penalty</i>	<i>or</i>	<i>Score</i>
A (WRENCH)				
	Perfect -----	--		10
	Nut toward handle -----	--		6
	Nut toward head -----	--		4
	Head wrong and nut wrong -----	--		1
	Merely stuck together, nut neglected -----	--		0
B (CHAIN)				
	Perfect -----	--		10
	All links right but one -----	--		9
	Links half looped -----	--		1
	Links merely stuck in, etc. -----	--		0
C (PAPER CLIP)				
	Perfect -----	--		10
	One lever reversed -----	--		8
	Both levers reversed -----	--		9
	Levers in right place but not clear in -----	--		5
	Levers put in backward -----	--		1
	Parts merely stuck together, aimlessly -----	--		0
D (BICYCLE BELL)				
	Perfect -----	--		10
	Correct except spring not hooked -----	--		5
	Correct except lever reversed and spring unhooked -----	--		4
	Lever and spring O. K., pinion wrong (Hammer and cover counted as in place in above.) -----	--		2
	Hammer wrong, add 2 to other pen- alties. -----	--		
	No attempt -----	--		0
E (COIN HOLDER)				
	Perfect -----	--		10
	Correct but cover unhooked -----	--		9
	Caps out of place -----	8		2
	Center stud omitted or inverted -----	2		8
	Center stud misplaced -----	--		8
	No attempt -----	--		0

F



10

2

1

1

0

G



10

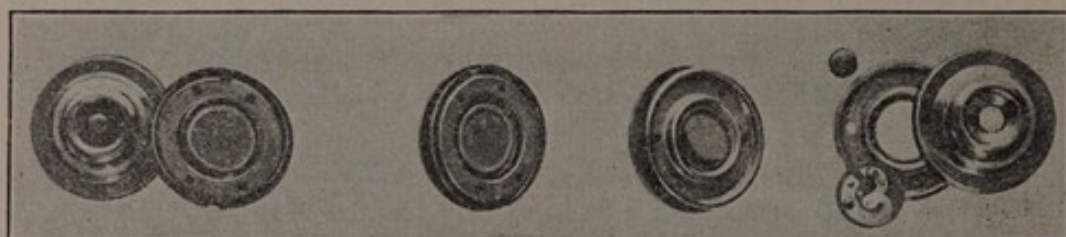
9

1

0

0

H



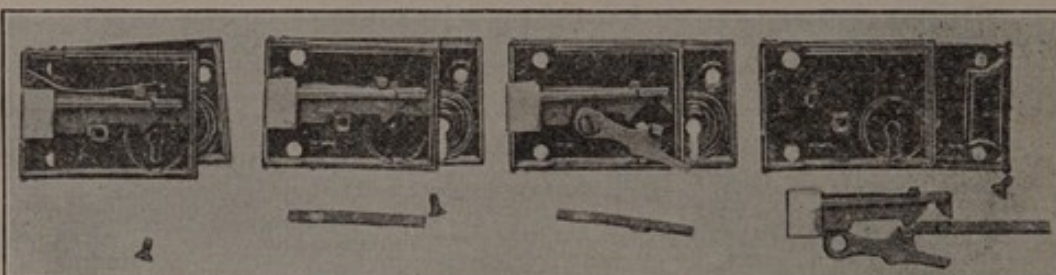
10

3

2

0

I



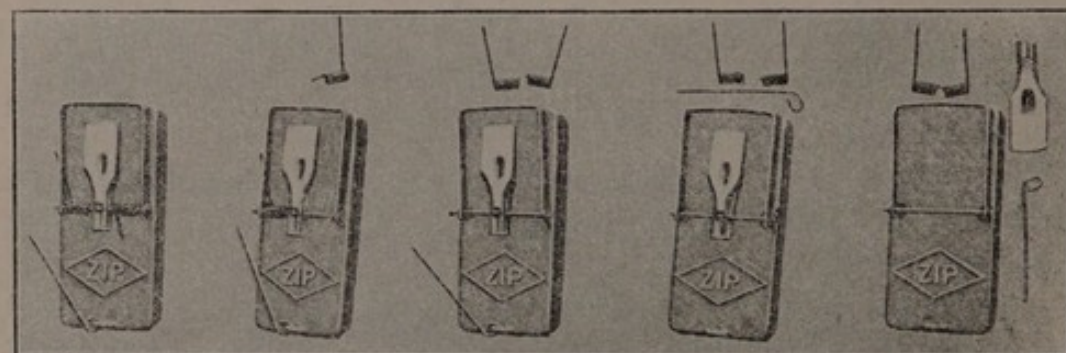
10

5

1

0

J



10

7

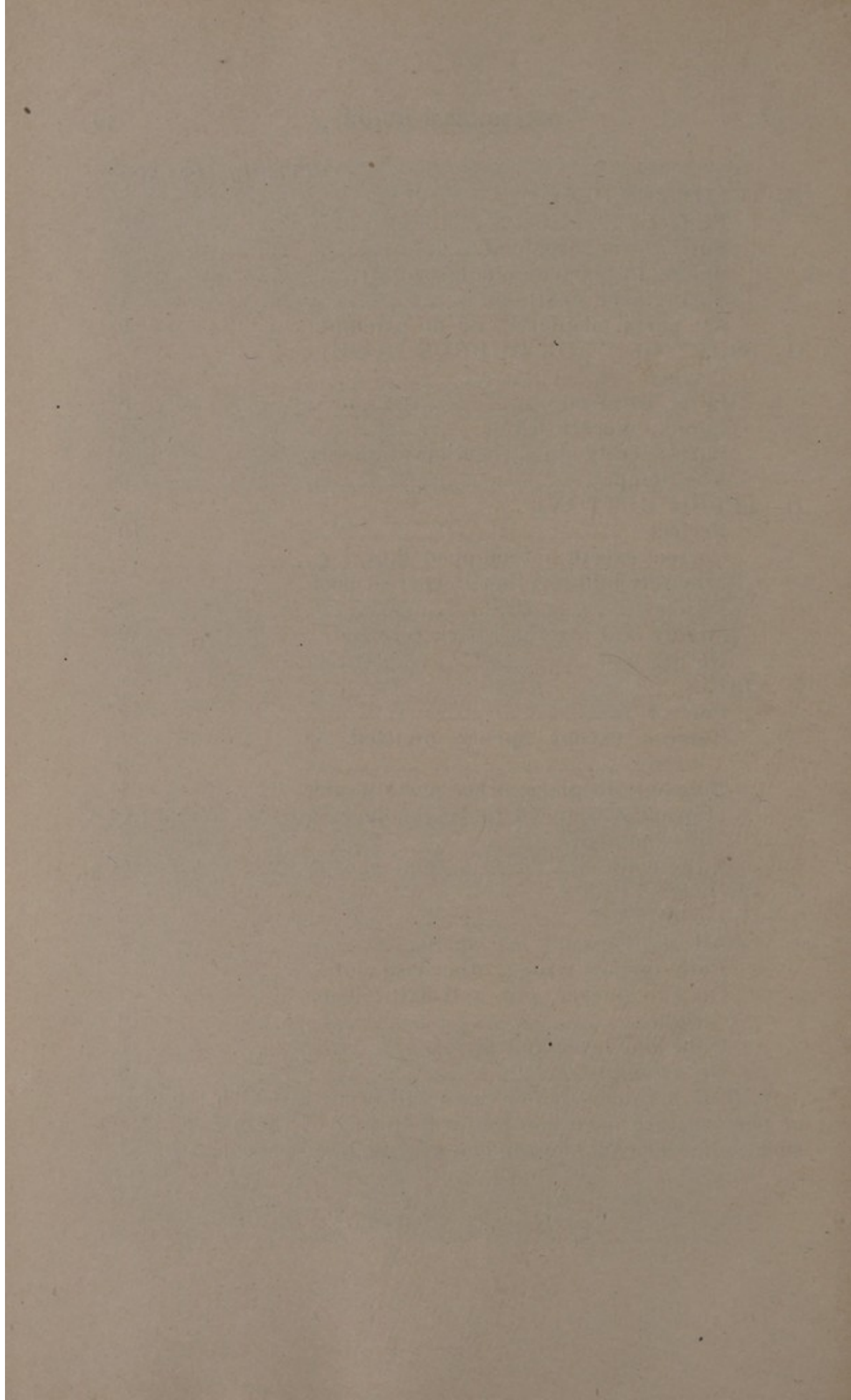
4

2

1

	<i>Penalty</i>	<i>or</i>	<i>Score</i>
F (CLOTHES PIN)			
Perfect -----	--		10
Spring over large end -----	--		2
Spring in place on one lever only -----	--		1
Spring over small end -----	--		1
All parts misplaced, or no attempt -----	--		0
G (SHUT OFF, FOR RUBBER HOSE)			
Perfect -----	--		10
Lever reversed -----	--		9
Lever underneath -----	--		1
Parts merely stuck together aimlessly -----	--		0
No attempt -----	--		0
H (PUSH BUTTON)			
Perfect -----	--		10
Correct except not snapped shut, <i>i. e.</i> , merely laid together in correct posi- tion -----	--		3
Merely laid together, back reversed -----	--		2
No attempt -----	--		0
I (LOCK)			
Perfect -----	--		10
Correct except spring omitted or wrong -----	--		5
Bolt only in place, other parts wrong (Cover is assumed to be in place in all the above.) -----	--		1
No attempt -----	--		0
J (MOUSE TRAP)			
Perfect -----	--		10
All right except one spring -----	--		7
Both springs wrong, otherwise right -----	--		4
Only loop-lever, pin, and bait-trigger right -----	--		2
Only loop-lever and pin right -----	--		1
No attempt -----	--		0

N. B. Examiner.—A few cases will occur in which the degree of performance does not conform to any of the above. Mark such values as equal to the one nearest like it above.

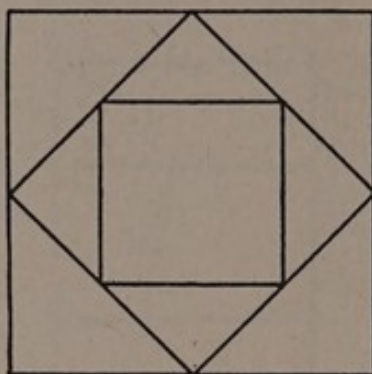


Test Q, d. 1, d. 2

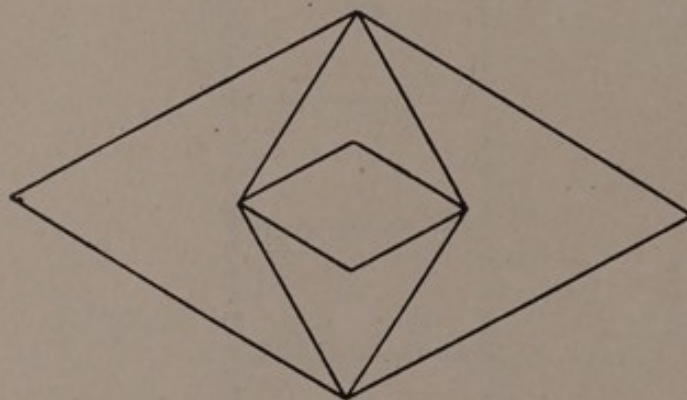
d. 2

d. 1

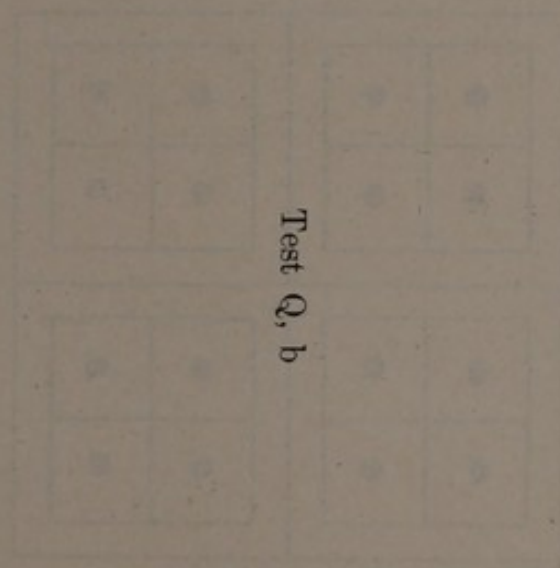
Test Q, c. 1, c. 2

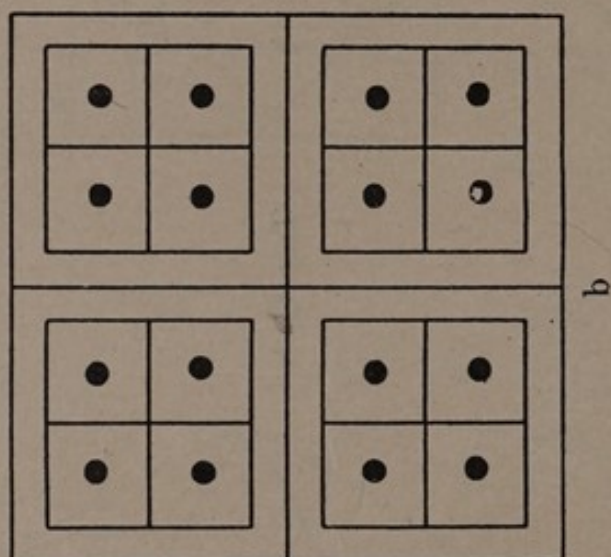


c. 2



c. 1





Test Q, a

