

Iron Workers local 383 Joint Apprenticeship Committee requires all applicants to take a series of tests to assess the applicants potential for success in the Apprenticeship training program.


The required tests are the Flannigan Aptitude Classification Test (FACT). The specific tests included in the battery and a short description of the factors measured are as follows:


VERBAL:	Language and problem solving abilities necessary for the Successful completion of the classroom aspects of the apprentice Training program
COORDINATION.	Ability to coordinate hand and arm movements in a smooth and accurate manner
PATTERNS:	Ability to perceive and reproduce simple pattern outlines. In a precise and accurate way.
COMPONENTS:	Ability to locate and identify important parts of a whole
ASSEMBLY:	Ability to visualize the appearance of an object assembled From a number of separate parts.
ARITHMETIC:	Ability to work quickly and accurately with numbers-to Add, subtract, multiply, and divide.
MECHANICS:	Ability to understand mechanical principles and to analyze Mechanical movements.

DIRECTIONS

This is a test of your speed and accuracy in following a circular path with a pencil.

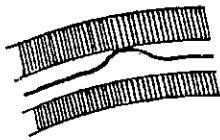
Look at the figure at the bottom of this page. You are to draw around the white path.

When you are told to begin, start at the point marked like this  Draw around the dark center and enter ring 1. Continue right around to ring 2, and gradually work out to the last ring.

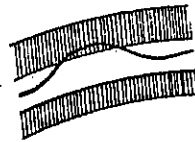
The solid bar  at the bottom of the figure is the end of the path. Always take the quickest route across the white open space at the bottom of the figure as you go from one ring to the next. You are not scored on this part of the figure, so your lines may cross here as much as you wish. Do not go *into* the dark center portion, however, since *any* lines in the blue parts of the figure are counted as errors.

Your score will depend on both speed and accuracy. You will have 40 seconds for each path. You will get a good score if you reach one of the last two rings.

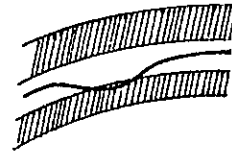
You will be penalized for errors. Your score will be reduced each time your pencil *touches* the side of the path and each time it goes *outside* the path. Here are some errors that will reduce your score. Example A is a "touch." In Examples B and C, the lines go outside the path.



Example A



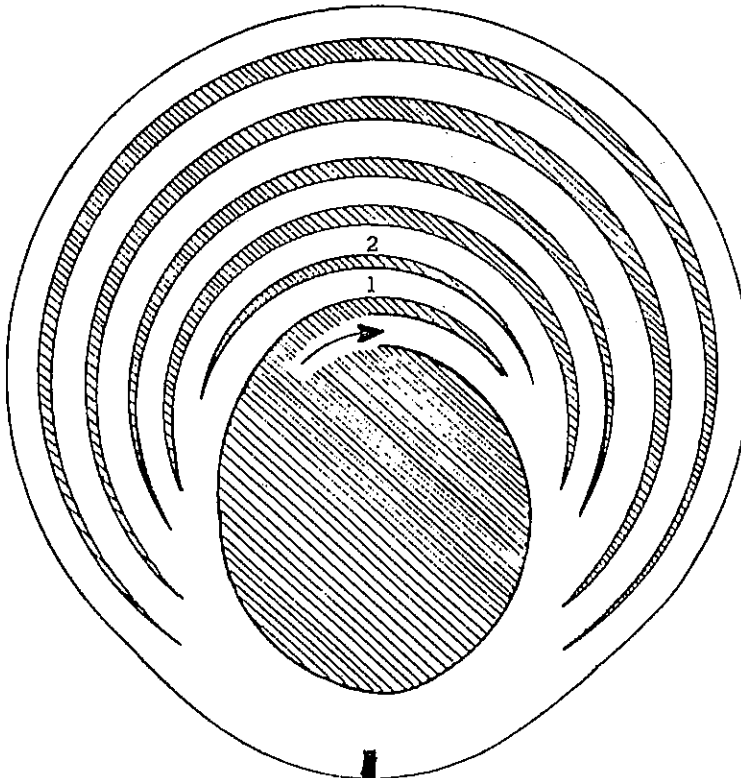
Example B



Example C

You should work at a speed that allows you to finish or nearly finish every path, but you should avoid careless errors. If you do make a mistake, return to the correct white path as quickly as you can and continue drawing. Even if you make a mistake, do not lift your pencil off the paper until you finish or time is called.

You will have the short practice problem at the bottom of this page and two full-length Practice Problems to adjust your speed. Plan your rate so that you have just finished or have nearly finished each path when time is called. You should reach the last or next to last ring on every path. Unless you reach these outer rings, *you cannot make a satisfactory score.*



DIRECTIONS

This is a test of your ability to do simple number work quickly and correctly. There are three parts.

PART I

In this part, you will find addition, subtraction, and mixed addition and subtraction problems. Work each problem. Find the correct answer, and make a cross through that number. There is only one correct answer. The samples below have been marked correctly:

$5 + 4 + 8 + 2 + 6 =$ 52 23 42 26
 $33 - 7 - 4 - 6 - 5 =$ 9 21 16 19 25
 $45 - 9 + 6 - 2 - 3 =$ 34 40 37 51 66

Now work the following practice problems and make a cross through the correct answer.

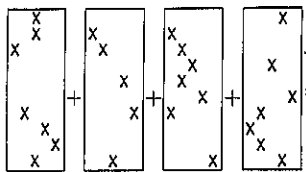
$8 + 5 + 4 + 7 + 9 =$ 33 24 37 29 34
 $42 - 3 - 6 - 8 - 5 =$ 15 18 20 23 25
 $39 + 7 - 4 - 6 + 2 =$ 44 40 36 42 38

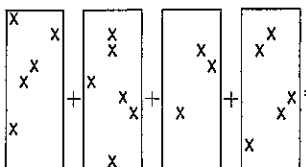
You should have marked 33, 20, and 38.

STOP HERE. DO NOT GO ON.

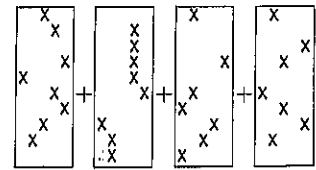
PART II

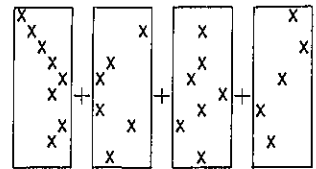
In this part, you will add the number of X's in a series of boxes. You will be able to work faster and get a better score if you do not count the X's one by one. Try to count the X's by grouping them together in two's and three's or even by seeing all the X's in a box at a glance. Work each problem. Find the correct answer and make a cross in the box by that number. The samples below have been marked correctly:


 26
 25
 $= 24$
 23
 27


 20
 17
 $= 16$
 19
 21

Now work the following practice problems and make a cross in the box by the correct answer.


 31
 29
 $= 26$
 28
 30


 25
 28
 $= 26$
 31
 27

You should have marked 30 and 26.

STOP HERE. DO NOT GO ON.

PART III

In this part, you will find multiplication, division, and mixed multiplication and division problems. Work each problem. Find the correct answer and make a cross through that number. The samples below have been marked correctly:

$19 \times 3 =$ 57 54 45 59 56
 $49 \div 7 =$ 5 11 9 7 8
 $141 \div 3 =$ 41 47 35 29 53
 $37 \times 5 =$ 155 176 185 158 165

Now work the following practice problems and make a cross through the correct answer.

$39 \times 6 =$ 234 224 223 242 243
 $156 \div 4 =$ 39 34 40 43 36
 $18 \times 5 =$ 120 80 58 90 85
 $94 \div 2 =$ 46 37 47 52 23

You should have marked 234, 39, 90, and 47.

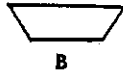
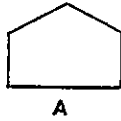
STOP HERE. DO NOT GO ON.

DIRECTIONS

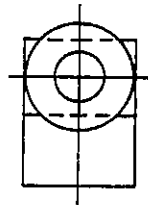
This is a test of your ability to identify a simple figure that is a part of a complex drawing. This test contains two parts.

In each part, you will be given a set of five simple figures and a number of more complicated drawings. Look at each drawing and try to discover which one of the simple figures is contained in it. The simple figure must be the same shape, the same size, and in the same upright position as the original simple figure. However, it does not make any difference if there are other lines running through this simple figure.

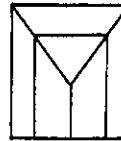
Here are five simple figures:



Which one of the above figures is a part of each of the complex drawings below? Mark an X in the box that has the same letter as the simple figure.



A B C D E



A B C D E

You should have marked Box E in drawing 1 and Box B in drawing 2.

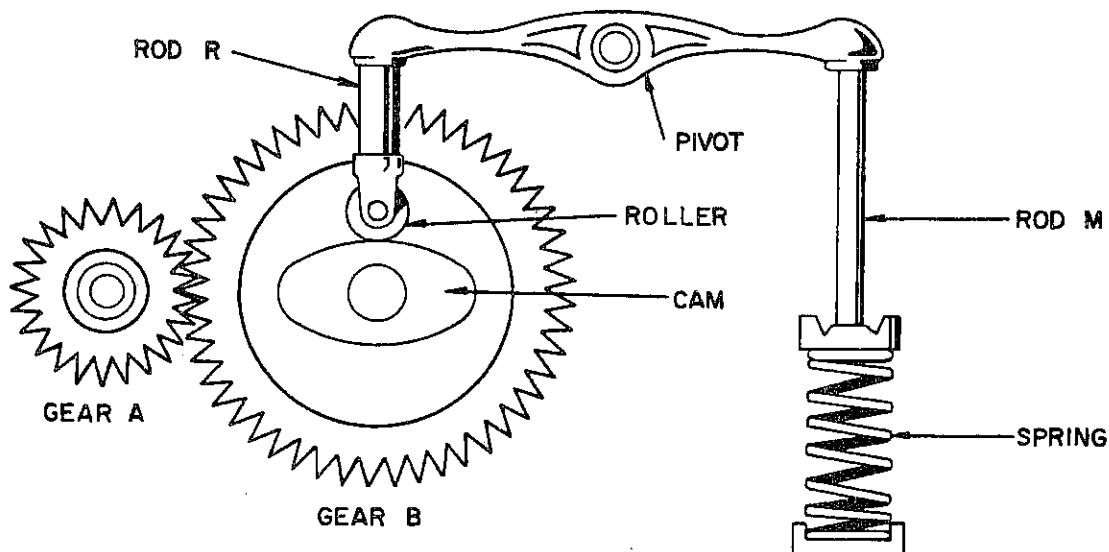
Remember, the figures you find must be shaped like the original figure. They must have solid lines where the original figure has solid lines. There is only one simple figure in each of the complex drawings.

This test contains two parts. Each part has a different set of five simple figures to look for. When you are told to begin, work on Part I only.

STOP HERE. DO NOT GO ON.

DIRECTIONS

This is a test of your ability to understand mechanical relations. Following each diagram in the test are a number of questions about that diagram. Each question has a choice of five possible answers. You are to choose the *best* answer and make a cross in the box to the left of that choice. Below is a sample problem:



For every two revolutions of gear A, the spring is compressed

- A. once.
- B. twice.
- C. three times.
- D. four times.
- E. five times.

A cross has been made in the box corresponding to answer B since every time gear A turns twice, gear B and the cam make one revolution. Since there are two elevated points on the cam, the roller is raised twice for each revolution of gear B. This causes the spring to be compressed twice.

Below is another practice question about the same diagram. Choose the best answer and make a cross in the corresponding answer box.

The distance the spring is compressed could be increased by changing the

- A. size of gear A.
- B. length of rod R.
- C. speed of gear B.
- D. length of rod M.
- E. shape of the cam.

You should have made a cross in the box for answer E since, of the five choices, changing the shape of the cam is the only way to increase the distance the spring is compressed.

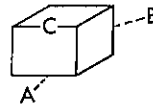
Study each diagram and then choose the best answer for each of the questions which follow it. You should work rapidly but carefully.

STOP HERE. DO NOT GO ON.

DIRECTIONS

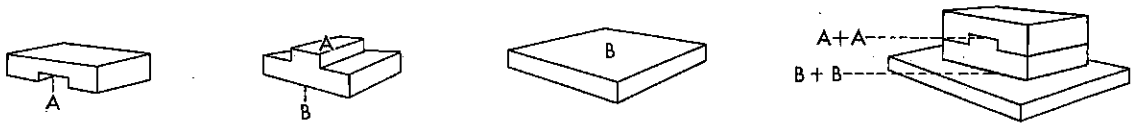
This is a test of your ability to visualize the assembly of mechanical parts. The separate parts are shown at the beginning of each test item. Following the picture of the parts are five assemblies of these parts. You are to select the assembly which shows how the parts will look when fitted together. Each part is marked with one or more letters which identify some particular place on the part. Letters referring to places which do not show are placed outside the part, with a dotted line pointing to the underneath side—or the place that you can't see. Figure 1 shows how a part is marked. In this figure, the letter A refers to the bottom of the cube, and B points to the back of the cube. Letter C refers to the upper front edge.

Figure 1



In the test, several parts are to be assembled so that the places having the same letter are put together. Look at Example 1. The section of the first part called A is joined to the A section of the second part. And the two surfaces called B in the second and third parts are also connected.

Example 1



You can see that the assembly is correct. The parts may be turned around or turned over. In each problem, the same parts are used in all of the possible assemblies. Only one of the pictures has the parts put together correctly.

Now look at the practice problems below. When you have decided which is the correct assembly, put an X in the box above that picture.

PRACTICE PROBLEMS

	<input type="checkbox"/> 1 	<input type="checkbox"/> 2 	<input checked="" type="checkbox"/> 3 	<input type="checkbox"/> 4 	<input type="checkbox"/> 5
	<input type="checkbox"/> 1 	<input type="checkbox"/> 2 	<input checked="" type="checkbox"/> 3 	<input type="checkbox"/> 4 	<input type="checkbox"/> 5

You should have marked assembly number 3 for Problem A, and assembly number 4 for Problem B.

STOP HERE. DO NOT GO ON.

SRA® VERBAL FORM

Prepared by Thelma Gwinn Thurstone, Ph. D.
and L. L. Thurstone, Ph. D., University of North Carolina

Print your name, group, and date in the spaces provided at the right side of this page. Now look at the problems below:

NAME
PRINT HEAVILY
Last
First
Initial
GROUP
DATE

CASH means the same as or opposite of: price refund money bank

Bill Laird pays a quarter for two cigars. How many can he buy for a dollar? 2 4 6 8 10

The wages paid to an employee: G— N— S— V— Y—
Think of the word that fits this description. Select the first letter of this word.

The next number in the series 2 4 6 8 10 12 is: 12 14 16 18 20

The right answers are money, 8, S— (for Salary), and 14. An X has been marked in the box in front of each of these answers.

Now work the problems below. In each row, put an X in the box for the answer. Mark your answers heavily. Do NOT make any marks except your answers.

If you want to change an answer, draw a circle around the box like this: . Then mark the new answer in the usual way.

MANY means the same as or opposite of: ill sour down few

An office has six typists. Two more are hired. What is the total number of typists now employed? 2 4 6 8 10
Use scratch pad for figuring. Do NOT mark on booklet.

A holiday from the job is a: B— D— M— T— V—
Think of the word that fits this description. Select the first letter of this word.

The next number in the series 10 8 11 9 12 10 is: 13 14 15 16 17

You should have marked the boxes in front of few, 8, V—, and 13. Be sure you understand how to work these problems. When the examiner gives the signal, you are to work more problems like those above. Work quickly, but try not to make mistakes. You will have 15 minutes. You are not expected to finish in the time allowed. *There are TWO pages of problems.*

STOP HERE—DO NOT TURN THE PAGE UNTIL THE EXAMINER TELLS YOU