The following information is provided to help you develop and improve your Mechanical & Spatial Aptitude. This is not the test you will be taking.

Additional resources to look for are:

- **Math – General Math Review written by Jerry Howett**
- **The Civil Service Aptitude Test Book**
- **Barron's Mechanical Aptitude and Spatial Relations Test by Dr. Joel Wiesen**

These books may be purchased online, at bookstores or you can check them out at a public library if available.

Please be reminded that the study information attached is NOT the test you will be taking. This information is simply to give you an understanding as to what may be on the test.

This page is a sample of the types of math problems that may be on the test you will be taking towards acceptance into the apprenticeship. Please note this is a practice sheet for your use, DO NOT RETURN. Also note the math portion of the test is only one section of the 4 part test. The entire test consist of:
1) Math 2) Spatial Aptitude 3. Mechanical Aptitude 4. General Knowledge

1. 49 + 4	2. 579 - 452	3. 93 - 65	4. 637 7882 93 + 2388	5. 10 ½ + 2 ¼ =
6. 5 ¾ 2 ½ + 10 1/5	7. 7 3/8 6 2/3 + 5 ½	8. 7 - _____ = 3 7/8	9. 20 7/8 - 5 1/6	10. 23 × 5
11. 983 × 43	12. 69 × 5.4	13. 64.7 × 9.52	14. 72 6 Answer _____	15. _____ 12) 68
16. 7/8 × 3/16 Answer _____	17. 5/16 ÷ 2/5 Answer _____	18. 3/9 of 108 = Answer _____	19. 13% of 93 = Answer _____	20. Write as a common fraction in lowest terms: .092 = _____
21. 7^4 = _____	22. If x = 7, C = 5, Solve 2x + 7C = _____	23. Solve: (10 – (20 +40)) / -50 Answer _____	24. 2Y - X – 23 -2Y -X + 18	25. 5M - B = 23 3M - B = 13 M = _____ B = _____

Example

Increase \$125 by 10% (This is the same as asking: what is 110% of \$125?)

100% + 10% = 110%

\$125 × 1.10 = \$137.50

Practice Exercises 3-10

1. Find 7% of \$35.00 _____
2. Find 3½% of \$900.00 _____
3. Find 1% of \$85.00 _____
4. Find ¼% of \$16.00 _____
5. Find 125% of \$940.00 _____
6. Find 11% of \$1000.00 _____
7. Find 10% of \$12.68 _____
8. Find 4% of \$69.88 _____

4% of \$25.00 is \$1.00
10% of \$2.50 is \$.25
125% of \$50.00 is \$62.50
200% of \$400.00 is \$800.00
20% of \$400.00 is \$80.00
2% of \$400.00 is \$8.00

Figure 3-6. Percent as related to money.

PRACTICAL APPLICATIONS OF PERCENT

Some typical applications of percent are discussed here to illustrate what might be encountered on the job.

Payroll Deductions

If instructed to deduct 3% of a weekly gross wage for a working assessment, how much should be deducted from a weekly wage of \$1040.89?

Solution: .3% = .03
.03 × \$1040.89 = \$31.23

Overhead

Using a figure of 20% for overhead expenses, how much should be added to an estimate of \$809 for a project to provide a bid which will account for the overhead?

Solution: 20% = .20
.20 × \$809 = \$161.80

Write the corresponding number in the space below the symbol.

π	☺	←	√	®	â	→	€
1	2	3	4	5	6	7	8

€	π	â	→	√	â	®	☺	€	←	π	√	→	â	€	√	←	®	π	☺

€	→	←	®	π	â	→	€	☺	π	√	®	â	€	←	☺	√	π	☺	→

Are the numbers or pictures on the left, equal = or not equal ≠

1. ☺☺☺☺ ☺☺☺ = or ≠

2. 23954955 23954955 = or ≠

3. 13654989 13656989 = or ≠

4.   = or ≠

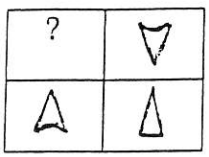
5. > < = or ≠

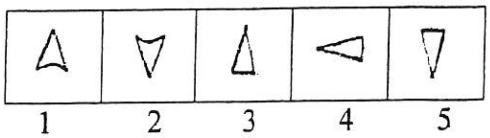
6. 3473742188928169 3473742188921869 = or ≠

7. 2461878226 2461878226 = or ≠

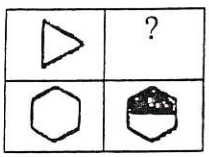
Which numbered box best fits in the box with a question mark?

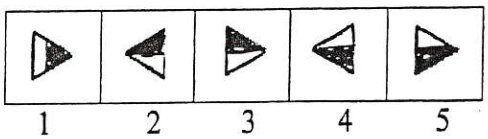
A.



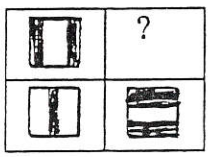


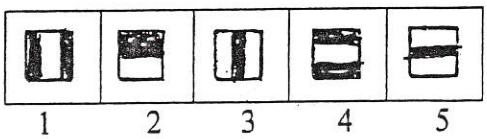
B.



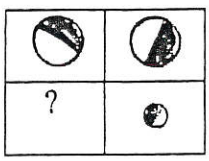


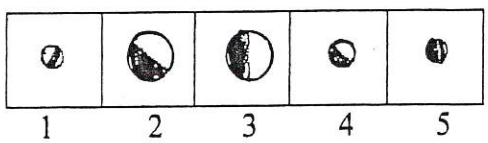
C.





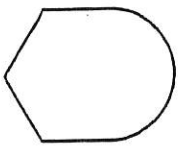
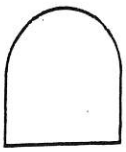
D.

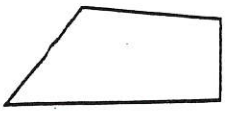
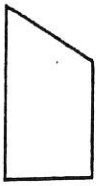


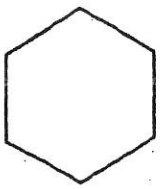
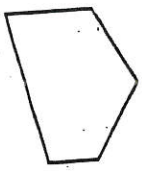


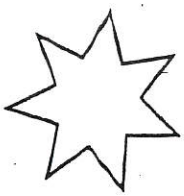
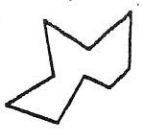
30 PRACTICE QUESTIONS

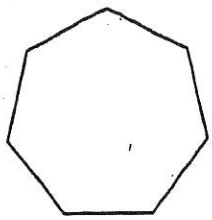
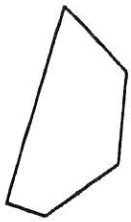
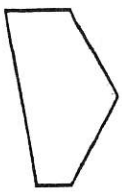
In questions 1–10 below, pick the TWO answer choices that will come together to make the figure shown. Pieces may be reflected and/or rotated.

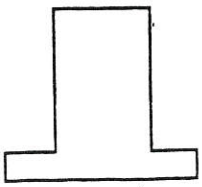
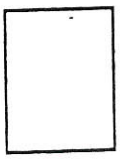
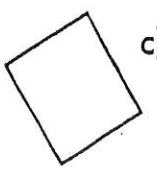
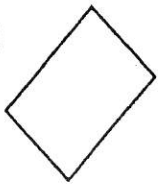
1. 
a) 
b) 
c) 
d) 
e) 

2. 
a) 
b) 
c) 
d) 
e) 

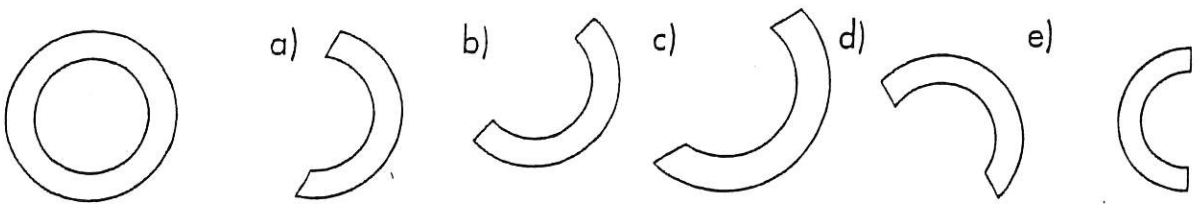
3. 
a) 
b) 
c) 
d) 
e) 

4. 
a) 
b) 
c) 
d) 
e) 

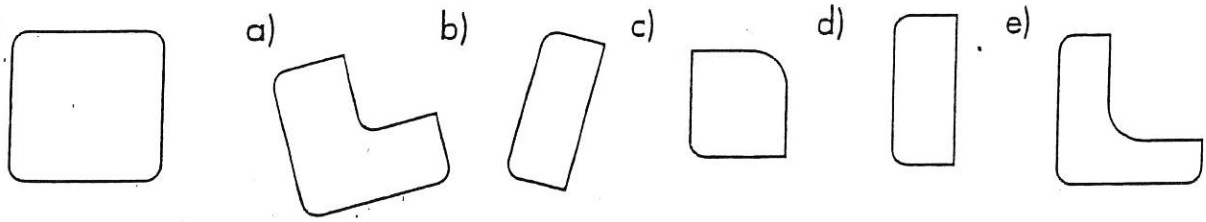
5. 
a) 
b) 
c) 
d) 
e) 

6. 
a) 
b) 
c) 
d) 
e) 

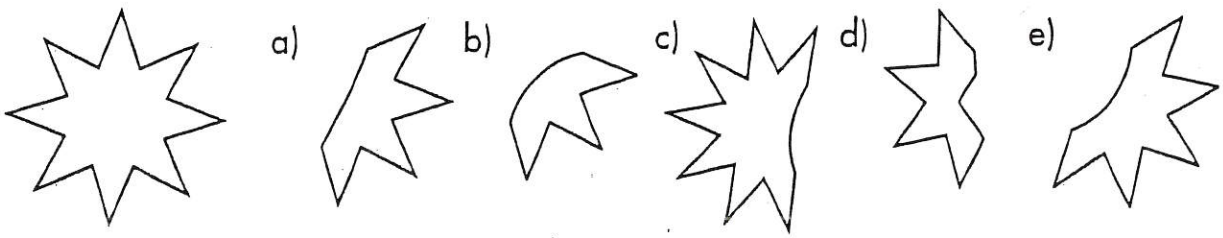
7.



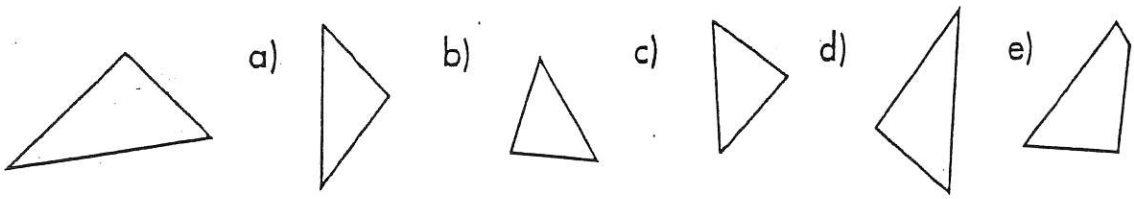
8.



9.

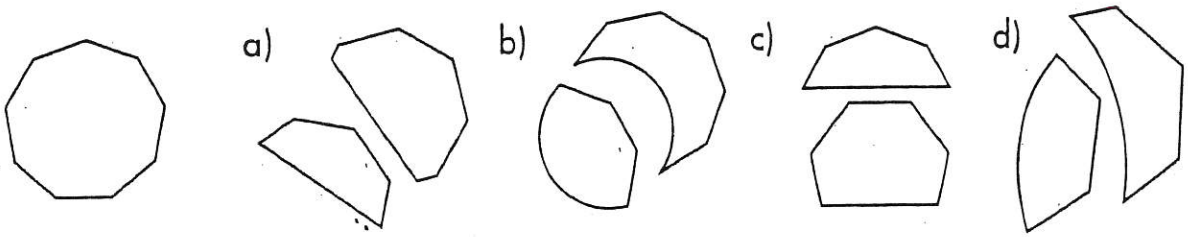


10.

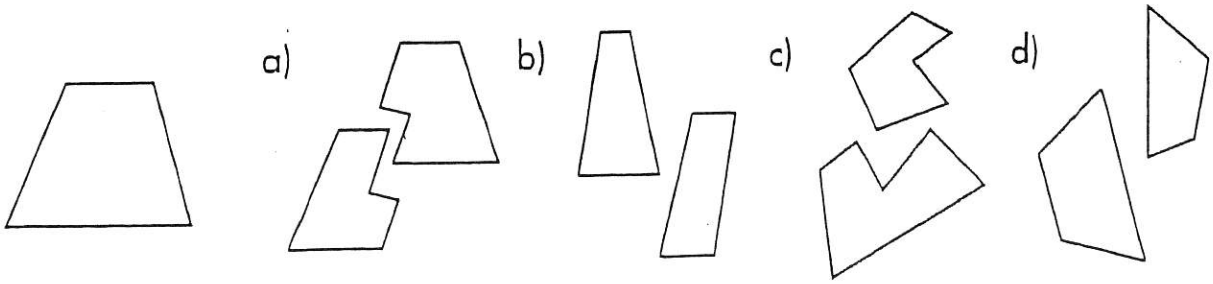


In questions 11–20 below, select the SINGLE answer choice that represents the two parts that join together to make the given whole. Pieces may be reflected and/or rotated.

11.

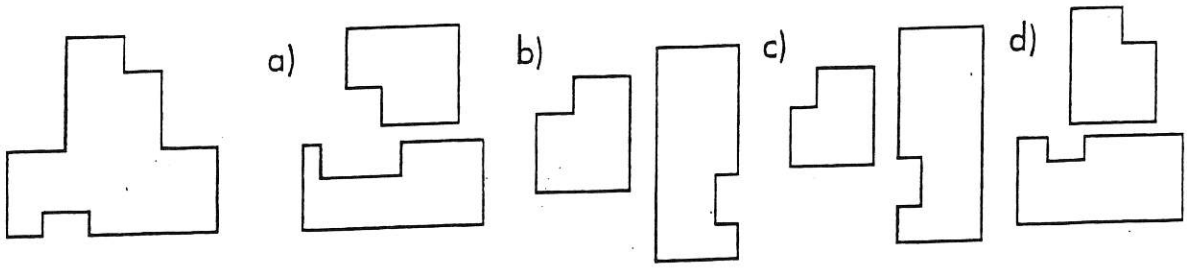


12.

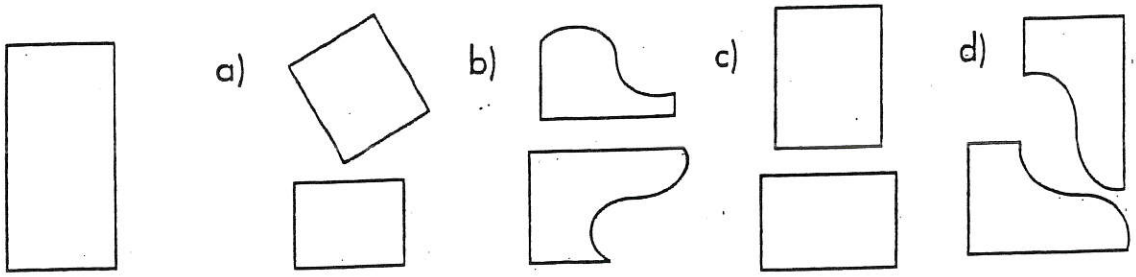


13.

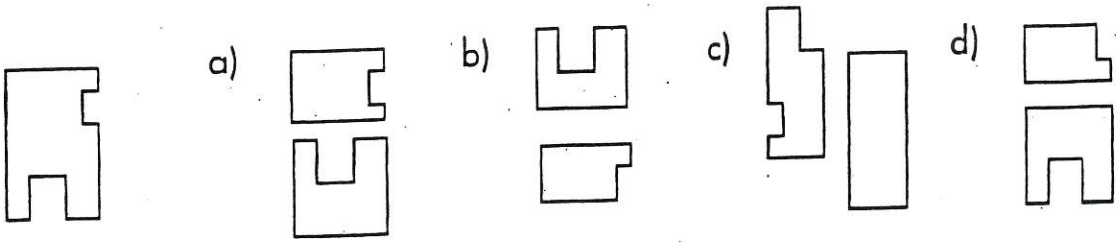
14.



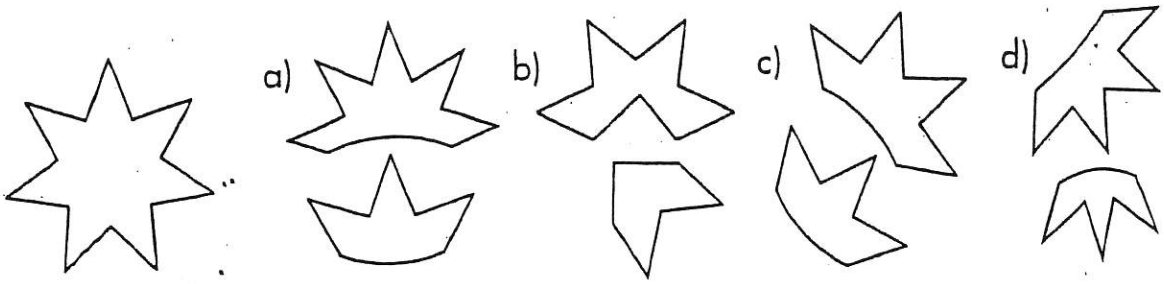
15.



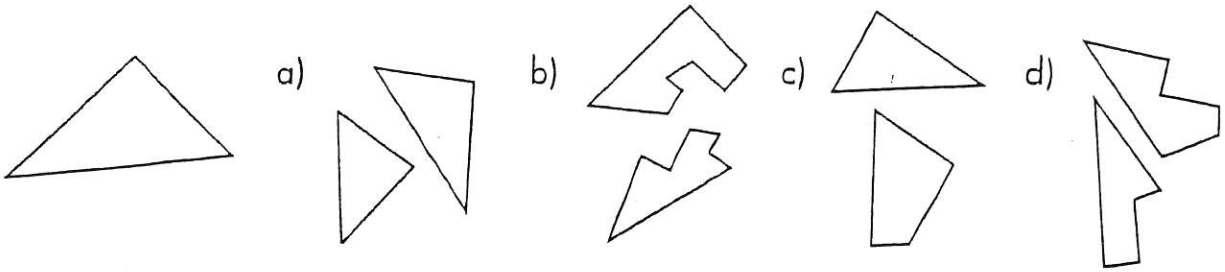
16.



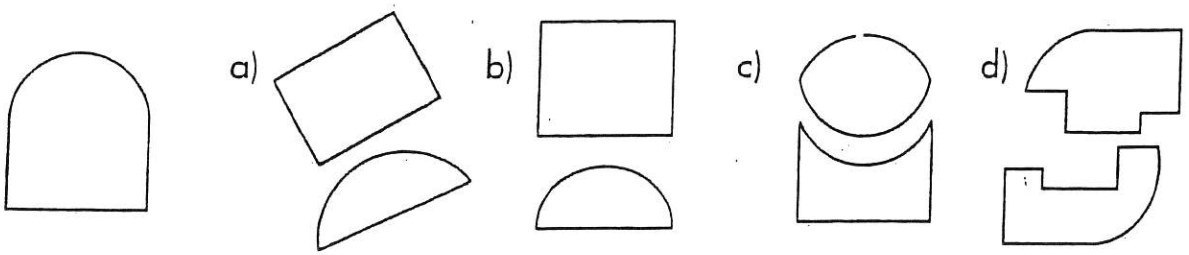
17.



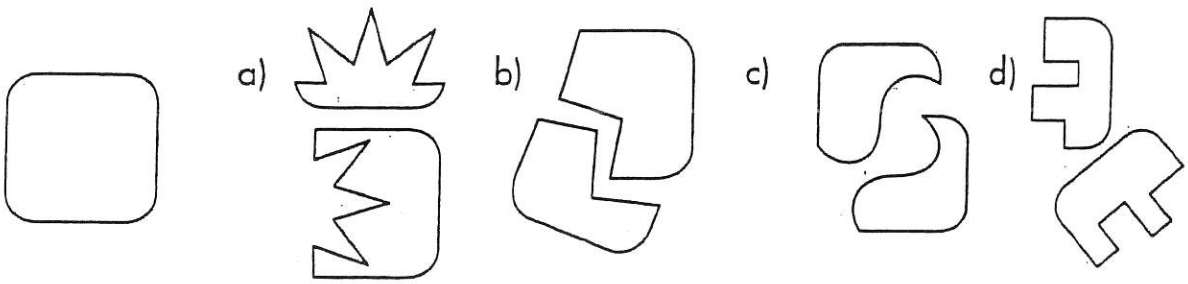
18.



19.

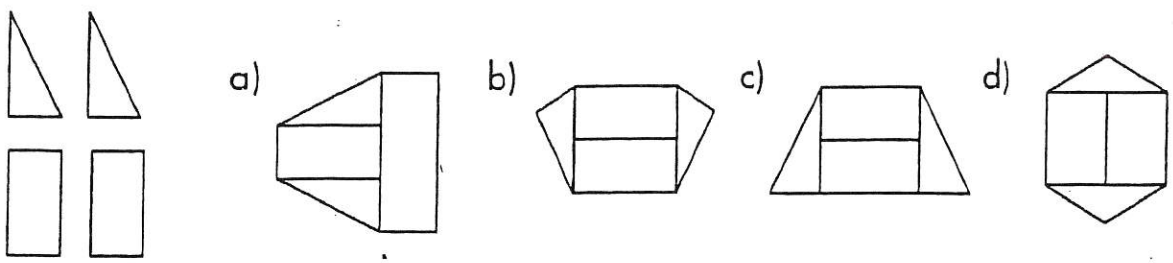


20.

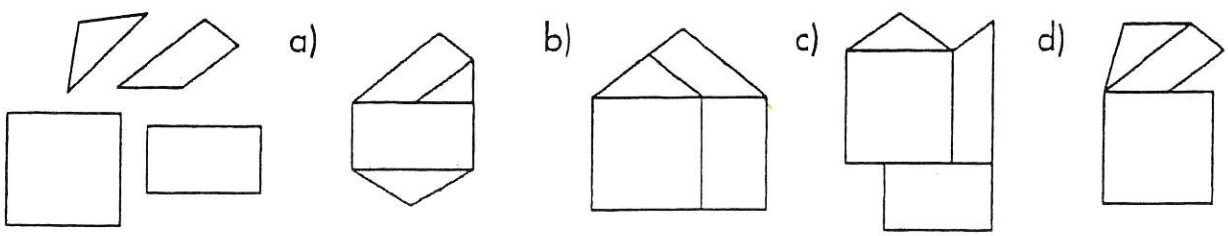


In questions 21–30 below, 4–5 pieces are given. Choose the answer choice that represents a figure comprised of ALL pieces. Pieces may be rotated and/or reflected.

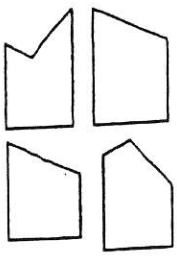
21.



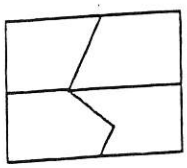
22.



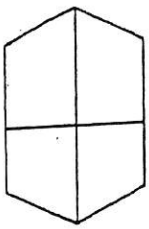
23.



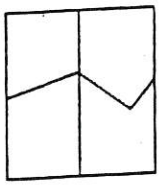
a)



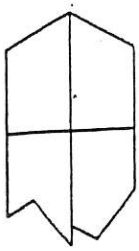
b)



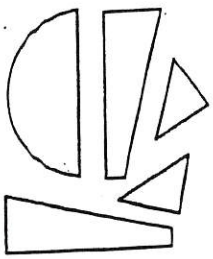
c)



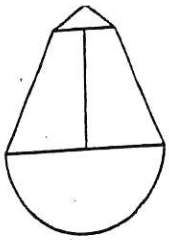
d)



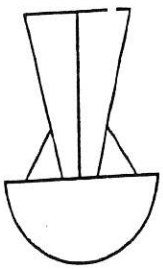
24.



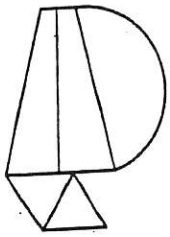
a)



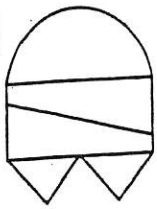
b)



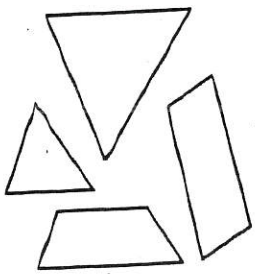
c)



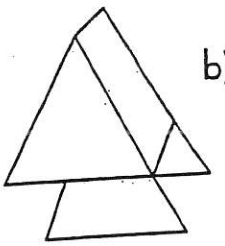
d)



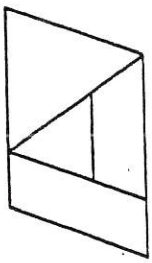
25.



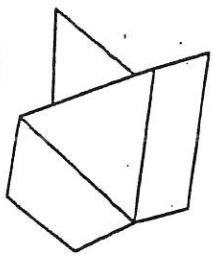
a)



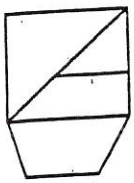
b)



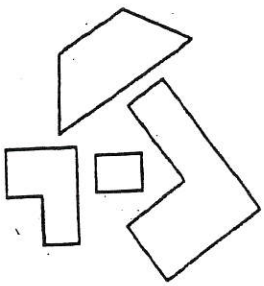
c)



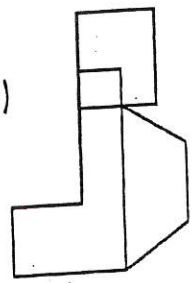
d)



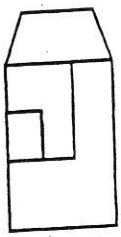
26.



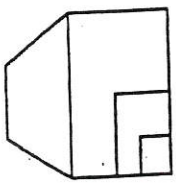
a)



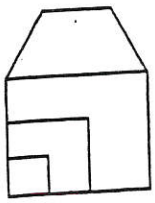
b)



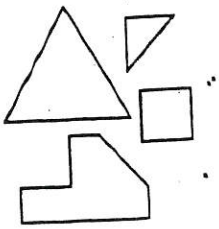
c)



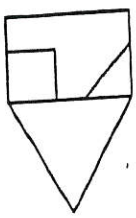
d)



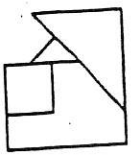
27.



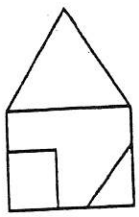
a)



b)



c)



d)

WTMA Sample Questions

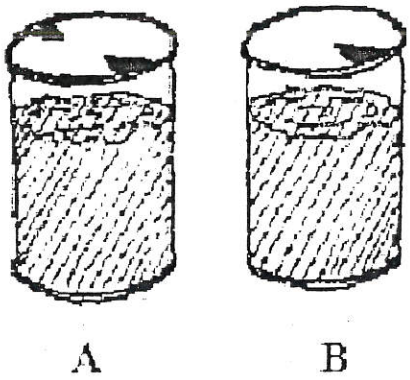
This test asks questions about everyday objects, things you might find in the kitchen or in other places in the home, or as you go about your everyday life.

None of these sample questions are from the test.

Order the WTMA
WTMA Content
Features & Benefits
Sample Questions
Fairness & Validity
Request More Information
WTMA Home
Business/Industry Home

Sample Questions

Sample Question



A B

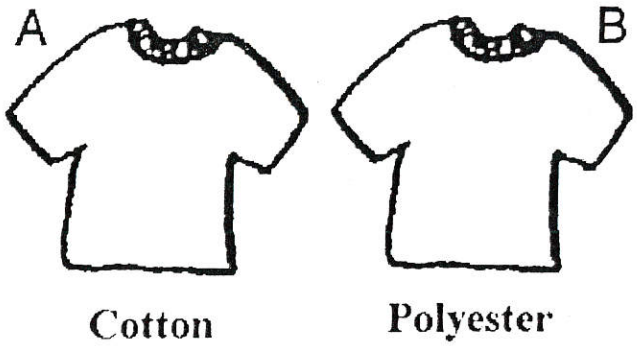
Look at this drawing of two cans of juice. Which will pour more easily?

(A) Can A

(B) Can B

(C) No difference

Sample Question



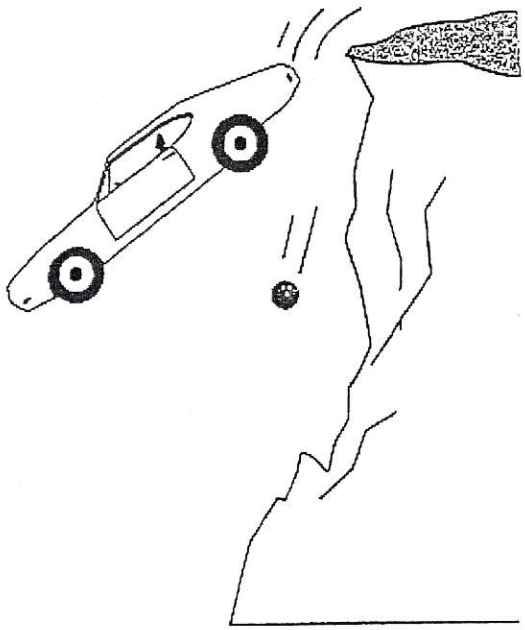
Which of these new shirts is more likely to shrink if washed in hot water?

(A) A

(B) B

(C) Can't tell

Sample Question



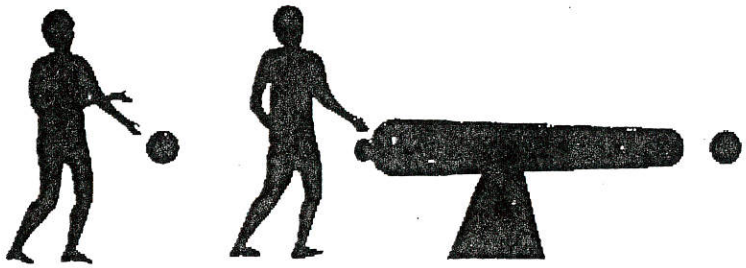
If a car and a bowling ball were thrown off a 100 foot cliff at the same time, which would hit the ground firs

(A) Car

(B) Ball

(C) No difference

Sample Question



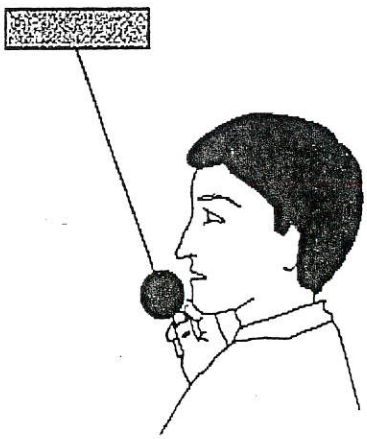
If a cannon fires a cannonball horizontally and you drop a cannonball at the same time, which will hit the ground first?

(A) Drop

(B) Fire

(C) No difference

Sample Question



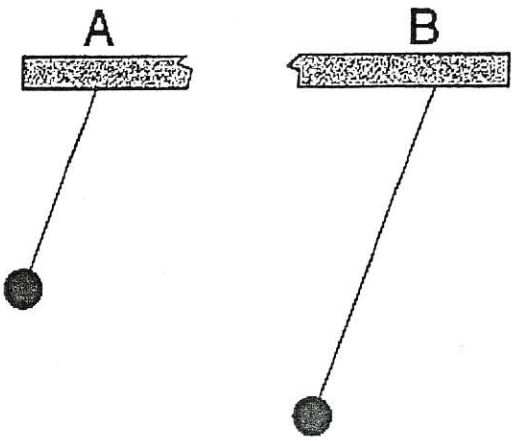
You tie a string to the ceiling and attach a weight to the end. You hold the weight next to your face but not touching it and then let go. The weight swings down and away from you and then starts swinging back towa you. If you do not move, will it hit you?

(A) Yes

(B) No

(C) Can't tell

Sample Question



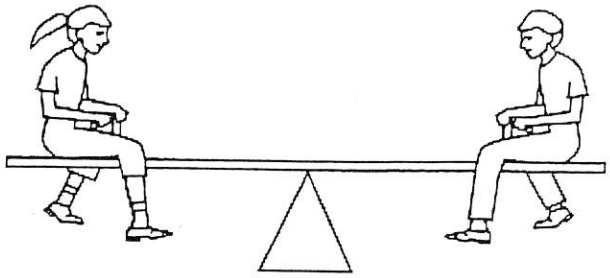
You put the same amount of weight at the end of these two pendulums. If you let go of the two pendulums the same time, which will swing back and forth more times in a minute?

(A) A

(B) B

(C) No difference

Sample Question



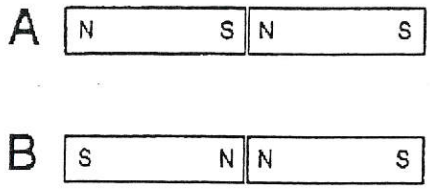
These children weigh the same. Will this seesaw balance?

(A) Yes

(B) No

(C) Can't tell

Sample Question



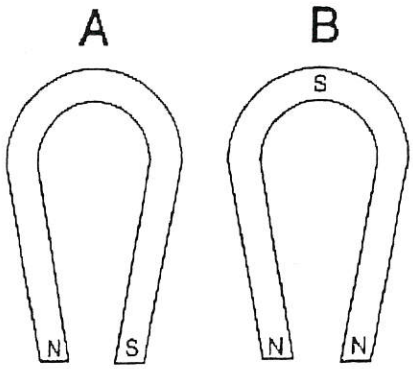
Which of these pairs of magnets will stick together in the positions they are in?

(A) Drawing A

(B) Drawing B

(C) Both Drawings

Sample Question



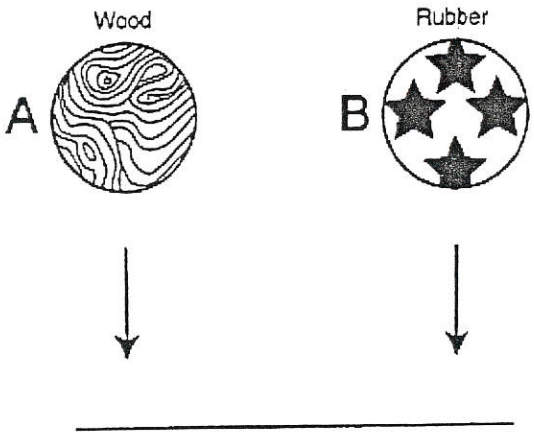
Which of these show how the poles are arranged on horseshoe magnets?

(A) Drawing A

(B) Drawing B

(C) Neither

Sample Question



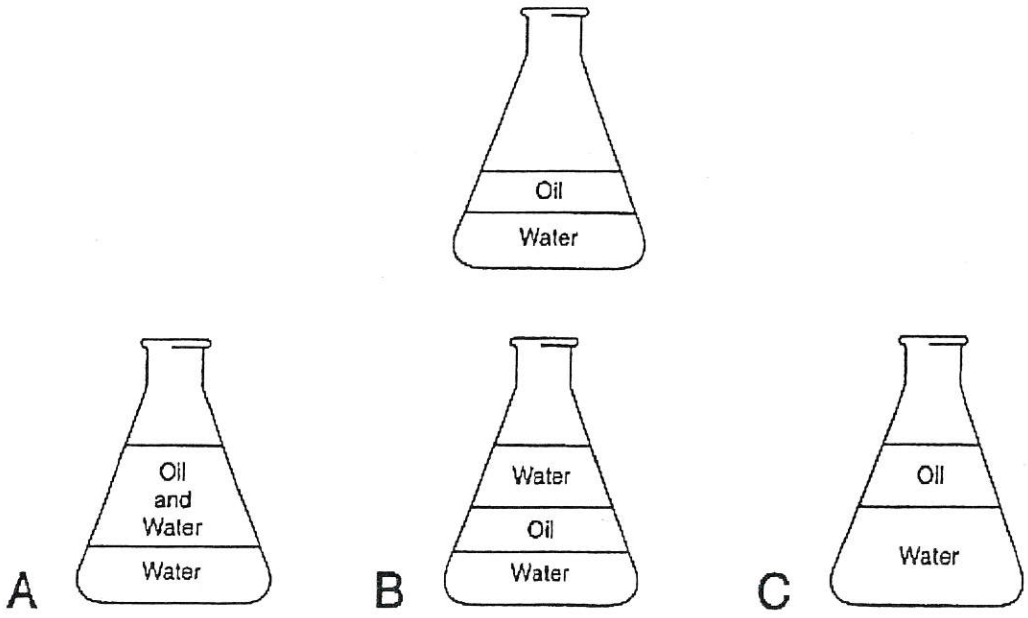
Which ball would bounce higher if dropped from the same height?

(A) Ball A

(B) Ball B

(C) No difference

Sample Question



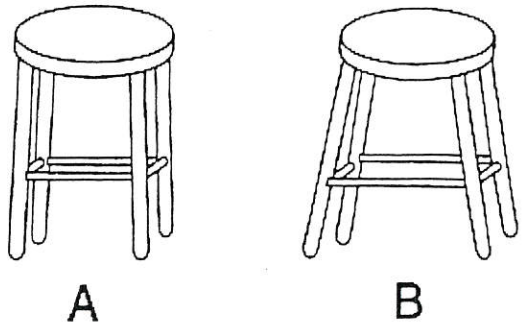
At the top is a drawing of a glass container holding water and oil. If you add more water what would it look like?

(A) A

(B) B

(C) C

Sample Question



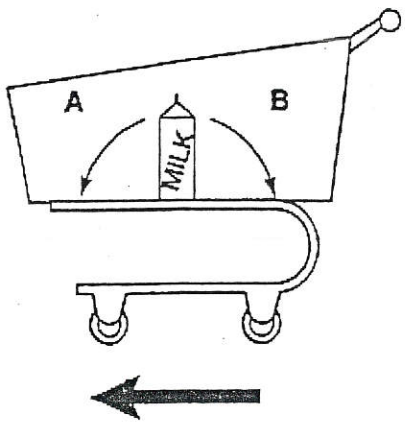
These stools are the same height. Which is more likely to tip over when an active child sits on it?

(A) Stool A

(B) Stool B

(C) No difference

Sample Question



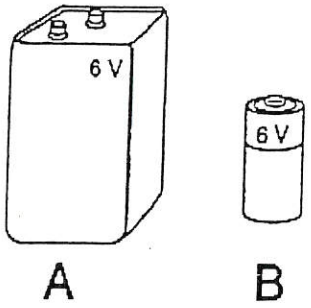
If the shopping cart was moving in the direction of the big arrow and then you stopped it suddenly, which w would the milk carton fall?

(A) A

(B) B

(C) Can't tell

Sample Question



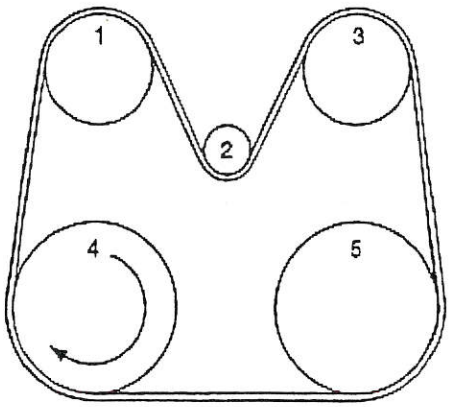
Which battery has the higher voltage?

(A) Battery A

(B) Battery B

(C) There's no difference

Sample Question



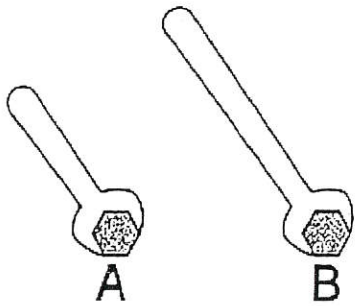
Which wheels are turning in the same direction as wheel 4?

(A) 1, 2, and 3

(B) 1, 2, and 5

(C) 1, 3, and 5

Sample Question



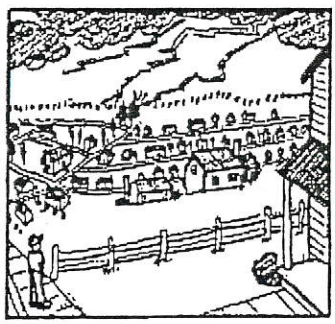
Which wrench will make it easier to tighten the bolt?

(A) A

(B) B

(C) There's no difference

Sample Question



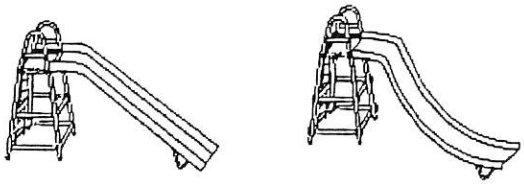
Lightning strikes at one end of a city. You are at the other end of the city. Would you hear the thunder or se the lightning first?

(A) Hear the thunder

(B) See the lightning

(C) You will hear and see at the same time

Sample Question



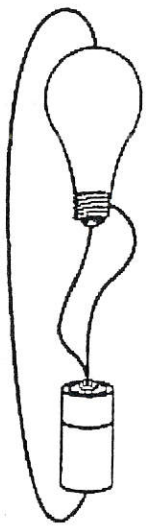
Which slide will give the faster ride?

(A) A

(B) B

(C) There's no difference

Sample Question



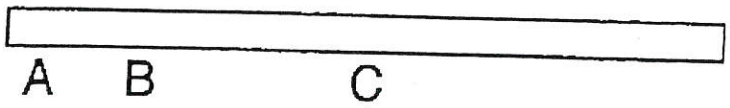
Will this bulb light up?

(A) Yes

(B) No

(C) Can't tell

Sample Question



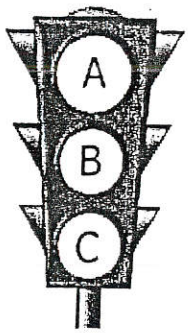
You want to lift this pole off the ground and carry it using one hand. Where should you pick it up to be able carry it most easily?

(A) A

(B) B

(C) C

Sample Question



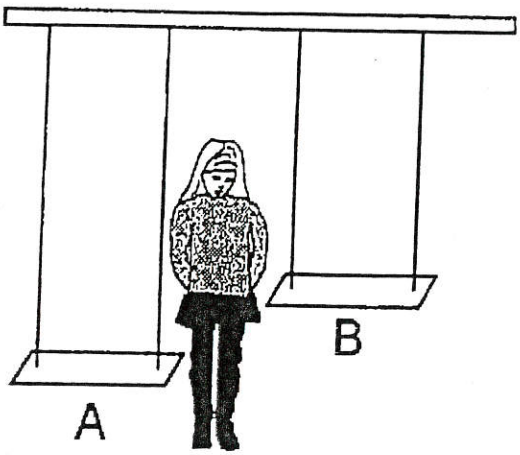
In this typical traffic signal, which light is the red one?

(A) A

(B) B

(C) C

Sample Question



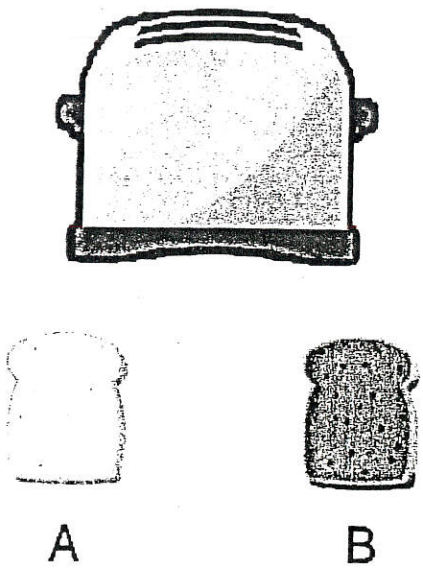
The girl wants to swing fast. After she gets up to full speed, on which swing will she cover more distance in minute?

(A) A

(B) B

(C) No difference

Sample Question



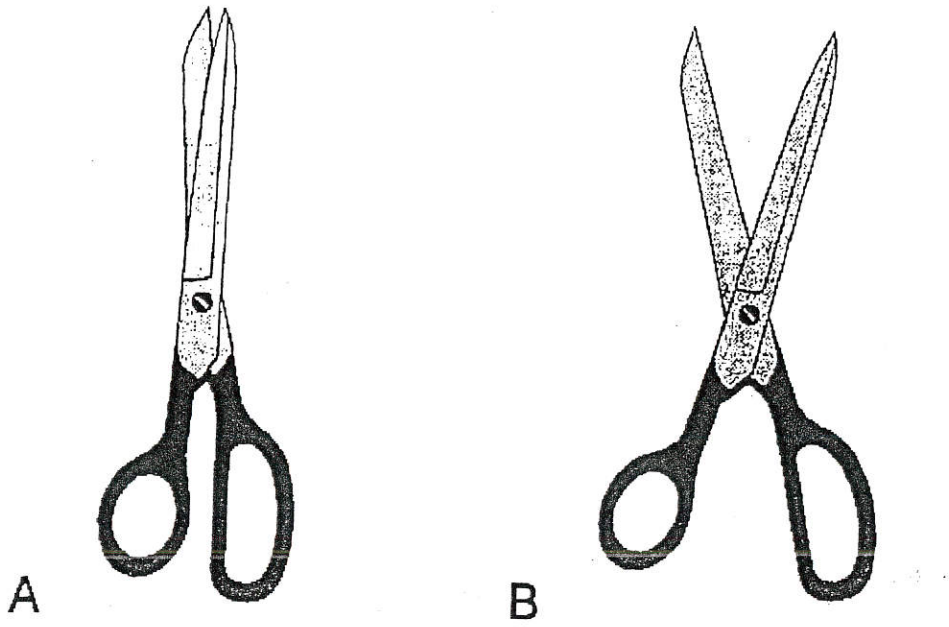
You start with two slices of bread that are exactly the same. You toast slice B. Which slice weighs more now

(A) A

(B) B

(C) There is no difference

Sample Question



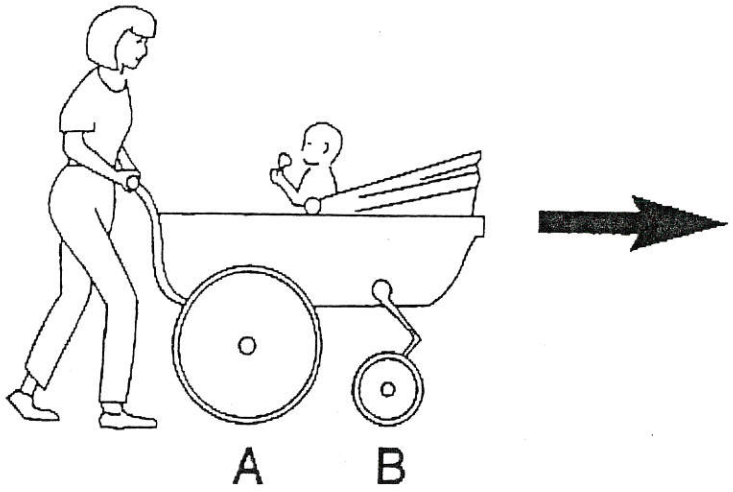
How far should you open the scissors so it is easier to cut a piece of cardboard?

(A) A

(B) B

(C) There is no difference

Sample Question

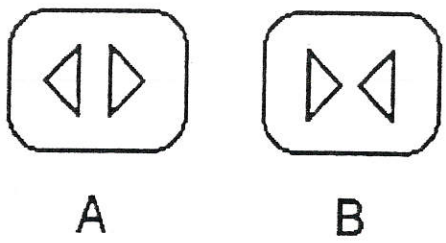


Which wheel is turning faster?
(A) A

(B) B

(C) No difference

Sample Question

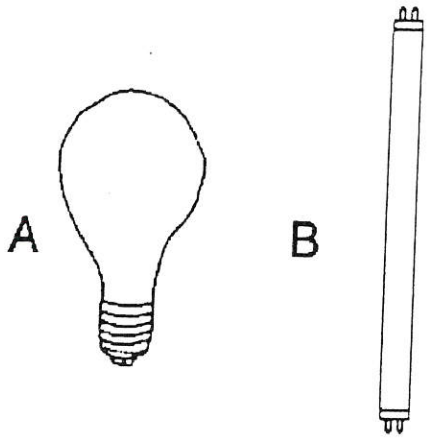


Which button should you push to close the doors of an elevator?
(A) A

(B) B

(C) Can't tell

Sample Question



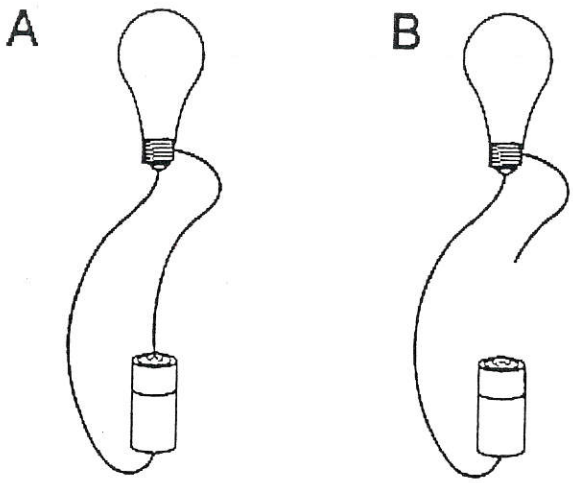
Which light bulb gets hotter?

(A) A

(B) B

(C) Can't tell

Sample Question



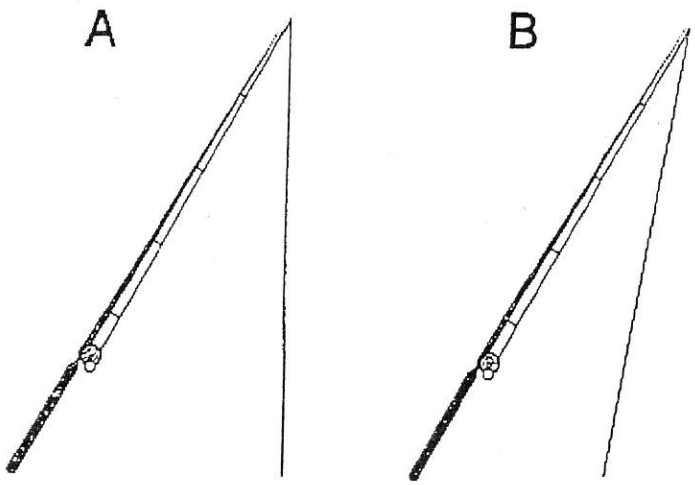
Which bulb will light up?

(A) Drawing A

(B) Drawing B

(C) Both

Sample Question



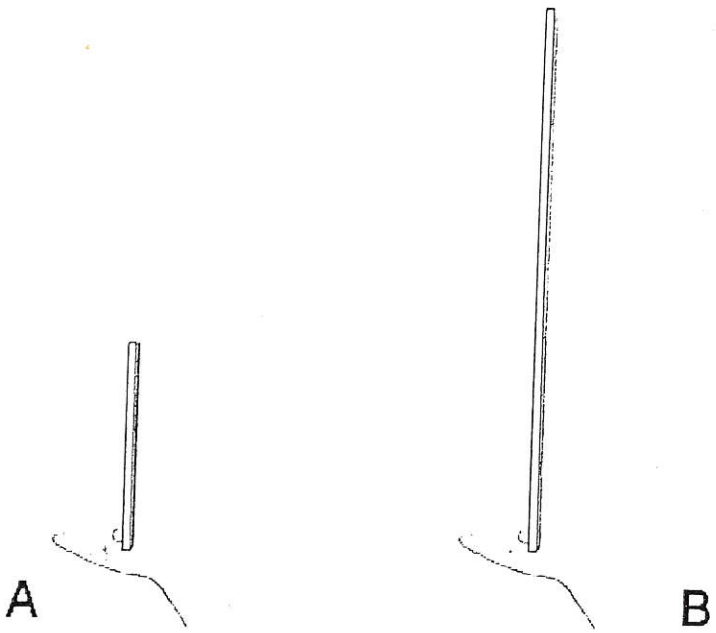
Which way will the fishing line hang when the fishing rod is tilted?

(A) Drawing A

(B) Drawing B

(C) Either

Sample Question



Which stick is easier to balance on the palm of your hand?

(A) Stick A

(B) Stick B

(C) No difference

27 Judith Road • Newton, MA 02459 • Tel.: 617.244.7405 • Info@APRTestingServices.com