Edison Electric Institute

Construction and Skilled Trades Selection System – Revised (CAST-R)

Practice Tests

Construction and Skilled Trades – Revised

The Construction and Skilled Trades Selection System – Revised (CAST-R) is a battery of aptitude and behavioral tests designed and validated to aid in the selection of candidates across a wide variety of electric power industry construction and skilled trades occupations. This test battery measures skills and abilities that are critical for effective job performance.

Preparing for the Tests

Resources for improving your reading, math, and mechanical comprehension skills may be found at your local libraries and bookstores, and online.

Taking the Tests

We recommend that you set aside a continuous 2-hour segment of time so you are able to complete all of the practice tests in one sitting. Each practice test includes a set of directions that provide a suggested testing time. Take note of these testing times and keep track of your time while taking the practice test so that you know how long it takes to complete it in relation to the time limit on the actual test.

Each practice test is followed by a separate section that includes the answer and an explanation for each test question. Compare your responses with the answers and explanations given to review your performance. Here are a few points to consider:

1. Did you exceed the time suggested for a test?
2. What questions did you get wrong?
3. Were any of the mistakes you made the result of rushing through the test?
4. Were there questions that you skipped, but in hindsight you could have answered?

For your convenience, an answer response sheet is provided at the end of this document. Recording your answers on this sheet is **not** mandatory and is only meant to assist in comparing your answers to those provided in the Answers and Explanations section for each test.

The CAST-R test battery includes the following four tests: ***Graphic Arithmetic***, ***Mechanical Concepts***, ***Reading for Comprehension,*** and the ***Work Preferences Inventory (WPI)***. Practice tests are available for tests of basic ability (i.e., Graphic Arithmetic, Reading for Comprehension, and Mechanical Concepts). We do not provide practice tests for tests that assess an individual's preferred work style, behavior, and environment (i.e., Work Preferences Inventory). Use the table below to locate each individual test within this document.

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Graphic Arithmetic Practice Test

These practice tests are for informational purposes only, and are not a guarantee that an applicant will pass a related test.

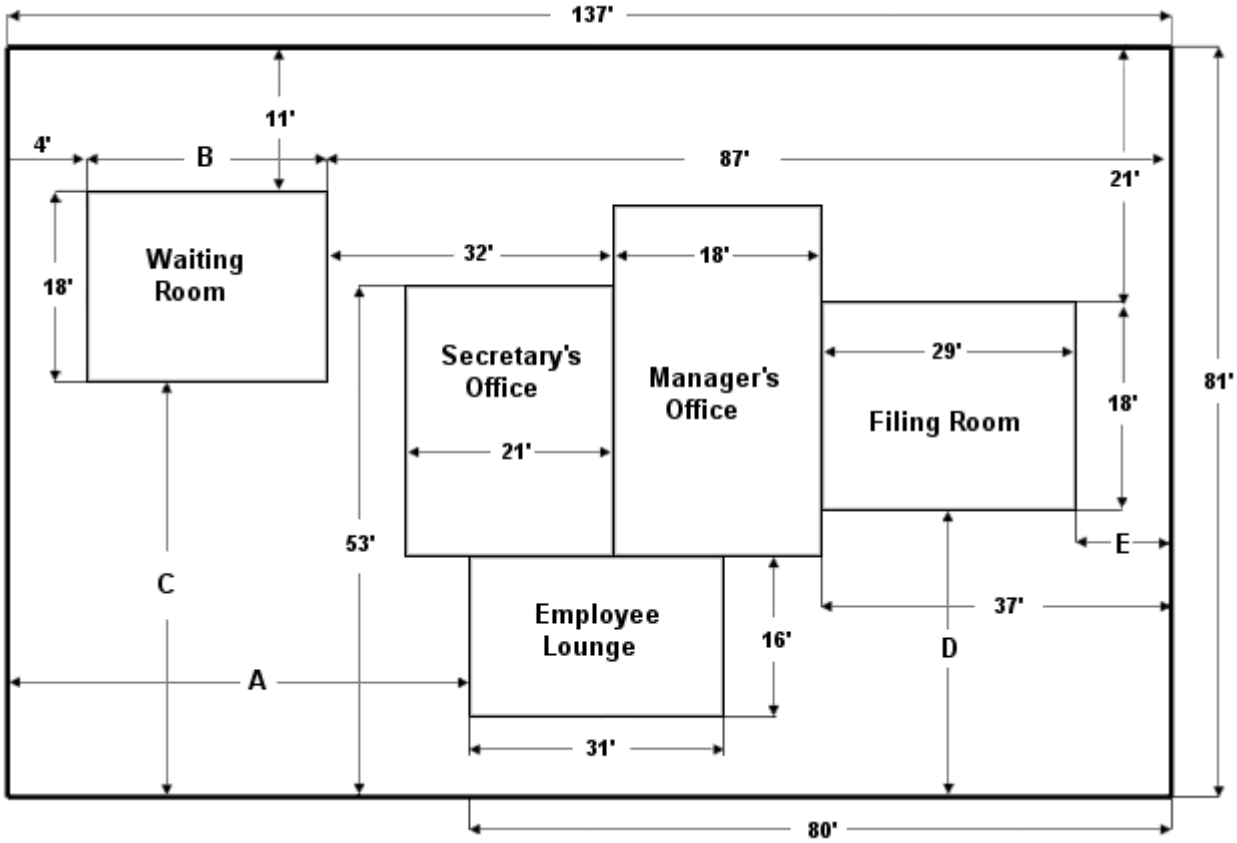
Graphic Arithmetic Practice Test

The Graphic Arithmetic test measures the ability to solve arithmetic problems by using information from drawings.

This practice test is similar in content and structure to the actual test. We recommend that you keep track of your time while taking the practice test so that you know how long it takes to complete it in relation to the time limit on the actual test. Answers and explanations for the practice test questions are provided at the end and are meant to be references once you complete the practice test.

Directions

This practice test contains one drawing followed by **8 questions** and the suggested testing time is **15 minutes**.



Question 1

What is the distance ("A") between the left edge of the property and the employee lounge?

Ⓐ 60'

Ⓑ 57'

Ⓒ 43'

Ⓓ 28'

Ⓔ None of the Above

Question 2

What is the width ("B") of the waiting room?

Ⓐ 44'

Ⓑ 47'

Ⓒ 87'

Ⓓ 46'

Ⓔ None of the Above

Question 3

What is the distance ("C") between the bottom part of the property and the waiting room?

Ⓐ 18'

Ⓑ 52'

Ⓒ 59'

Ⓓ 70'

Ⓔ None of the Above

Question 4

By how much is the width (from left to right) of the secretary's office greater than the width of the manager's office?

Ⓐ 4'

Ⓑ 14'

Ⓒ 3'

Ⓓ 21'

Ⓔ None of the Above

Question 5

What is the area of the employee lounge?

Ⓐ 772 square feet

Ⓑ 845 square feet

Ⓒ 496 square feet

Ⓓ 567 square feet

Ⓔ None of the Above

Question 6

The length (top to bottom) of the total property is _____ times longer than the length of the waiting room.

Ⓐ 4.2

Ⓑ 4.5

Ⓒ 5.2

Ⓓ 3.5

Ⓔ None of the Above

Question 7

What is the distance ("D") between the bottom edge of the property and the filing room?

Ⓐ 53'

Ⓑ 42'

Ⓒ 33'

Ⓓ 37'

Ⓔ None of the Above

Question 8

What is the distance ("E") between the right edge of the property and the filing room?

Ⓐ 8'

Ⓑ 29'

Ⓒ 14'

Ⓓ 6'

Ⓔ None of the Above

End of Practice Test

Check your time and then move on to the practice test answers and explanations beginning on the next page.

Graphic Arithmetic

Practice Test
Answers and Explanations

Question 1

What is the distance ("A") between the left edge of the property and the employee lounge?

Ⓐ 60'

Ⓑ 57'

Ⓒ 43'

Ⓓ 28'

Ⓔ None of the Above

Explanation: B is the correct answer. As can be seen in the drawing, A plus 80' makes up the width of the top and bottom borders of the rectangle. To find A, subtract 80' from the width of the rectangle specified at the top of the drawing (137').

A = 137' - 80'

A = 57'

Question 2

What is the width ("B") of the waiting room?

Ⓐ 44'

Ⓑ 47'

Ⓒ 87'

Ⓓ 46'

Ⓔ None of the Above

Explanation: D is the correct answer. As can be seen in the drawing, 4' plus B plus 87' makes up the width of the top and bottom borders of the rectangle. To find B, subtract 87' plus 4' from the width of the rectangle specified at the top of the drawing (137').

B = 137'- (87' + 4')

B = 46'

Question 3

What is the distance ("C") between the bottom part of the property and the waiting room?

Ⓐ 18'

Ⓑ 52'

Ⓒ 59'

Ⓓ 70'

Ⓔ None of the Above

Explanation: B is the correct answer. As can be seen in the drawing, 11' plus 18' plus C is the length of the left and right borders of the rectangle. To find C, subtract 11' plus 18' from the length of the rectangle specified on the right side of the drawing (81').

C = 81'- (18' + 11')

C = 52'

Question 4

By how much is the width (from left to right) of the secretary's office greater than the width of the manager's office?

Ⓐ 4'

Ⓑ 14'

Ⓒ 3'

Ⓓ 21'

Ⓔ None of the Above

Explanation: C is the correct answer. As can be seen in the drawing, the width of the secretary's office from left to right is 21' and the width of the manager's office is 18'. To solve the problem, subtract 18' from 21'.

21' - 18' = 3'

Question 5

What is the area of the employee lounge?

Ⓐ 772 square feet

Ⓑ 845 square feet

Ⓒ 496 square feet

Ⓓ 567 square feet

Ⓔ None of the Above

Explanation: C is the correct answer. To find the area of the employee lounge, multiply the length of the employee lounge by its width, which are both provided in the drawing. The width is 31' and the length is 16'.

31' x 16' = 496 square feet.

Question 6

The length (top to bottom) of the total property is _____ times longer than the length of the waiting room.

Ⓐ 4.2

Ⓑ 4.5

Ⓒ 5.2

Ⓓ 3.5

Ⓔ None of the Above

Explanation: B is the correct answer. To solve this question, you have to find the ratio of the two distances which are provided in the drawing. The length of the total property is 81', and the length of the waiting room is 18'.

81' ÷ 18' = 4.5'

Question 7

What is the distance ("D") between the bottom edge of the property and the filing room?

Ⓐ 53'

Ⓑ 42'

Ⓒ 33'

Ⓓ 37'

Ⓔ None of the Above

Explanation: B is the correct answer. As can be seen in the drawing, 18' plus 21' plus D makes up the length of the rectangle. To find D, subtract 18' plus 21' from the length of the rectangle specified on the right side of the drawing (81').

D = 81' - (18' + 21')

D = 42'

Question 8

What is the distance ("E") between the right edge of the property and the filing room?

Ⓐ 8'

Ⓑ 29'

Ⓒ 14'

Ⓓ 6'

Ⓔ None of the Above

Explanation: A is the correct answer. As can be seen in the drawing, the distance between the right border of the property and the left side of the filing room is 37' and the width of the filing room is 29'. To find E, subtract 29' from 37'.

E = 37' - 29'

E = 8'

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Mechanical Concepts Practice Test

These practice tests are for informational purposes only, and are not a guarantee that an applicant will pass a related test.

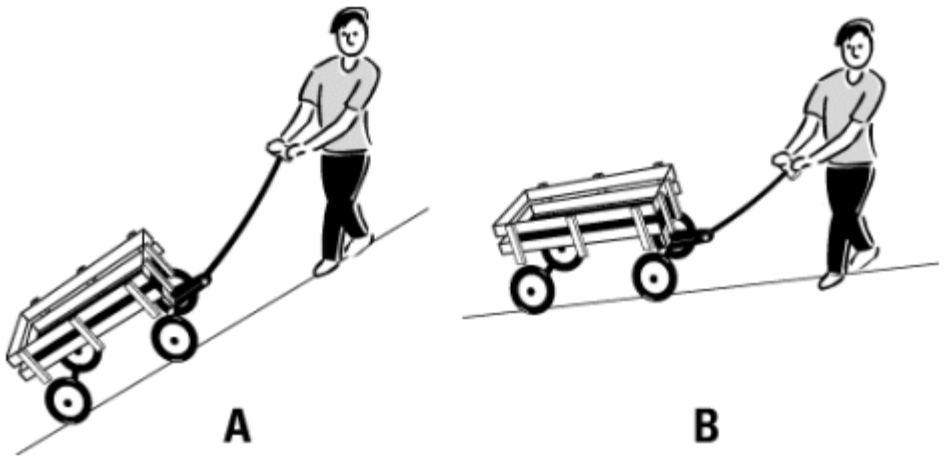
Mechanical Concepts Practice Test

The Mechanical Concepts test measures the ability to understand mechanical principles. Each question contains a pictorial description of a mechanical situation, a question, and three possible answers.

This practice test is similar in content and structure to the actual test. We recommend that you keep track of your time while taking the practice test so that you know how long it takes to complete it in relation to the time limit on the actual test. Answers and explanations for the practice test questions are provided at the end and are meant to be references once you complete the practice test.

Directions

Read each question carefully, study the picture, and decide which answer is correct. This practice test has **26 questions** and the suggested testing time is **12 minutes**.



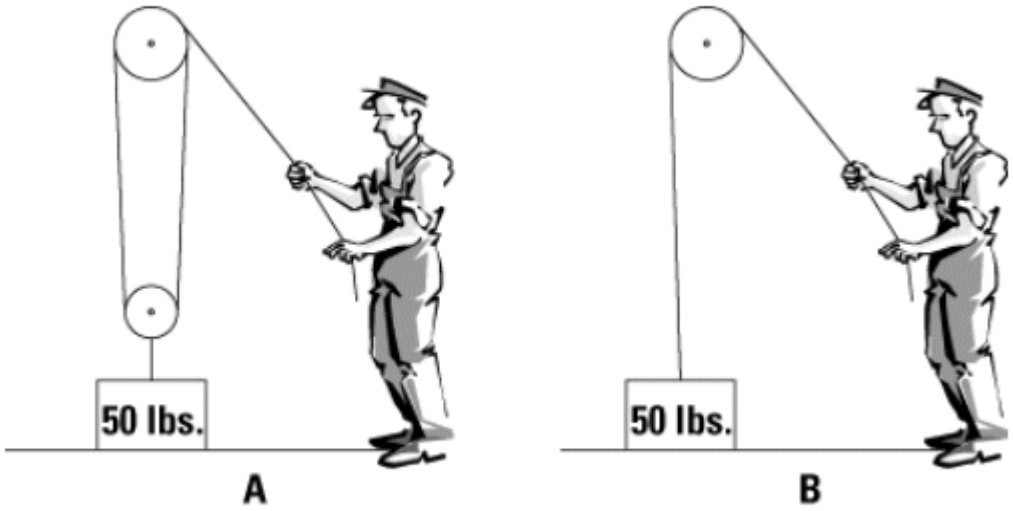
Question 1

Which of the two wagons of equal weight requires less force to pull?

Ⓐ Wagon A

Ⓑ Wagon B

Ⓒ Wagons A and B equally



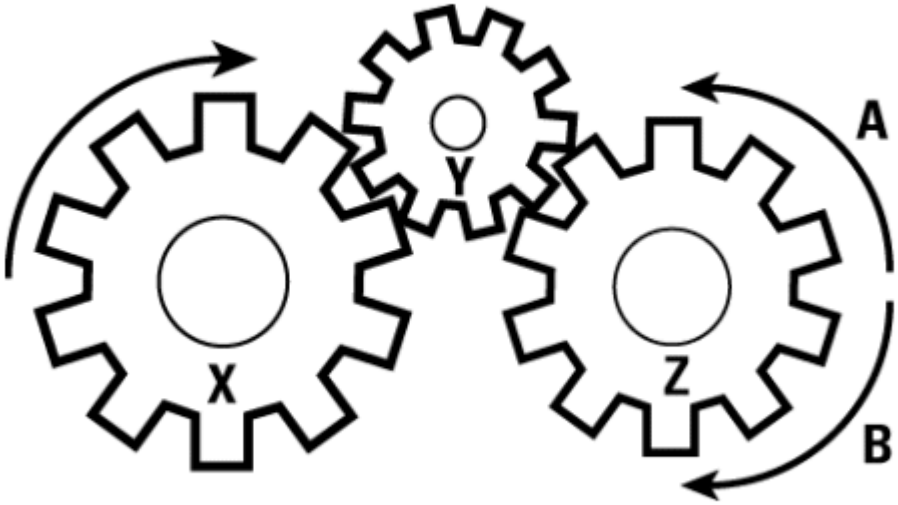
Question 2

Which of the two persons will have to exert more effort to pull the box up?

Ⓐ Person A

Ⓑ Person B

Ⓒ Person A and Person B equally



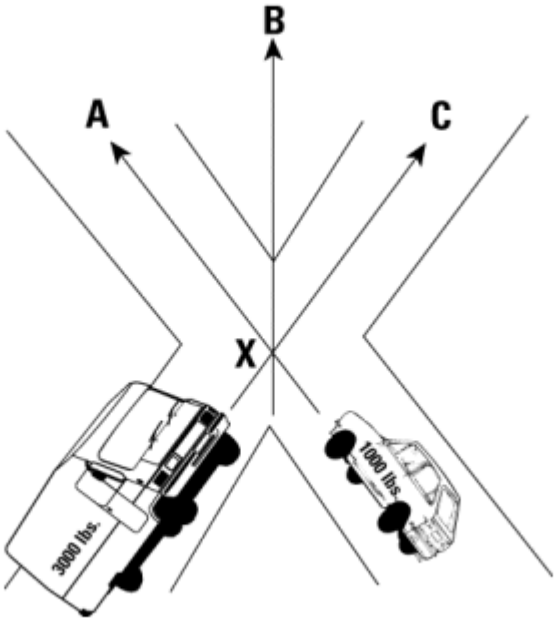
Question 3

In which direction will gear Z spin if wheel X is spinning clockwise?

Ⓐ Direction A

Ⓑ Direction B

Ⓒ Both directions A and B



Question 4

If the car and truck are moving at the same speed, in which direction will the truck tend to go when it collides with the car at point X?

Ⓐ Direction A

Ⓑ Direction B

Ⓒ Direction C

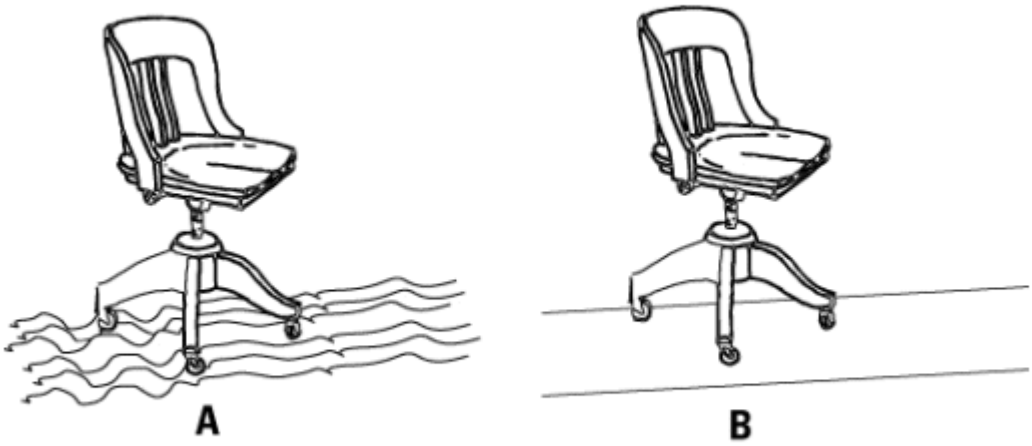
Question 5

On which side of the pipe would the water speed be slower?

Ⓐ Side A

Ⓑ Side B

Ⓒ Sides A and B equally



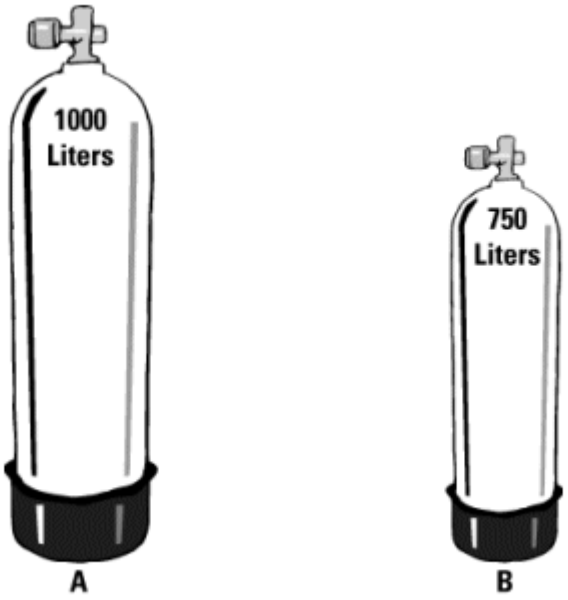
Question 6

Which of the two chairs with equal size and weight would be easier to drag across the room?

Ⓐ Chair A

Ⓑ Chair B

Ⓒ Chairs A and B equally



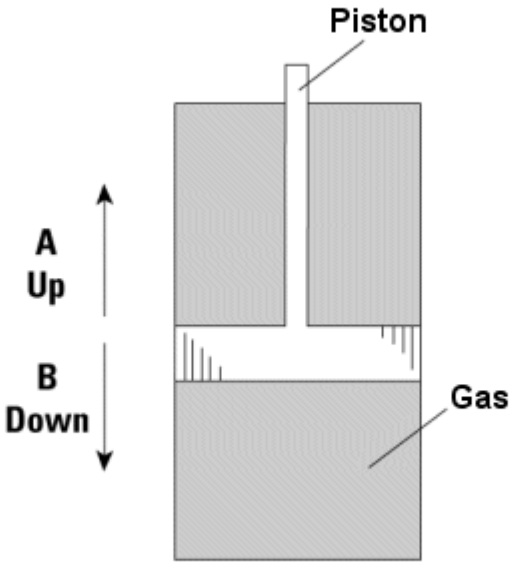
Question 7

Two tanks with different capacities contain the same amount of oxygen, 500 liters. In which of the tanks will the gas pressure be greater?

Ⓐ Tank A

Ⓑ Tank B

Ⓒ Tanks A and B equally



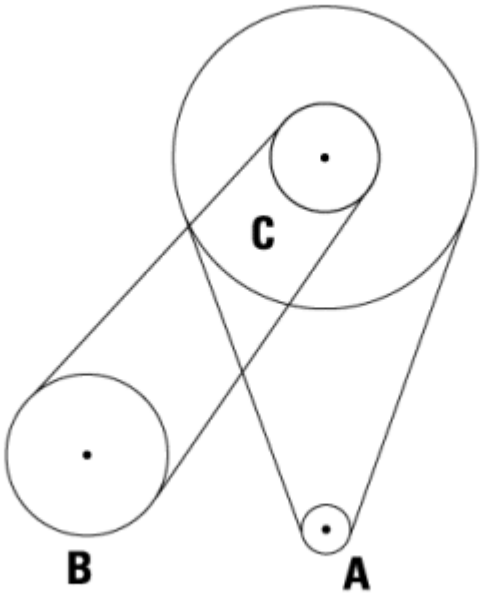
Question 8

A spark ignites the gas within the cylinder. In which direction would the piston move?

Ⓐ Up

Ⓑ Down

Ⓒ Neither direction



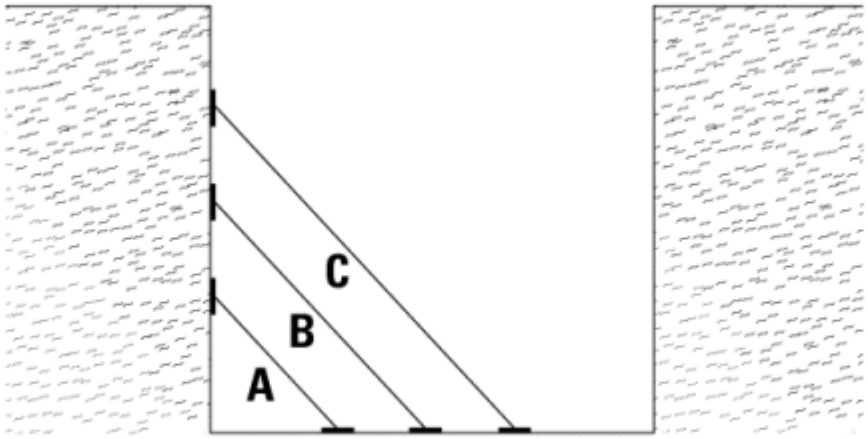
Question 9

Among this arrangement of three pulleys, which pulley turns fastest?

Ⓐ Pulley A

Ⓑ Pulley B

Ⓒ Pulley C



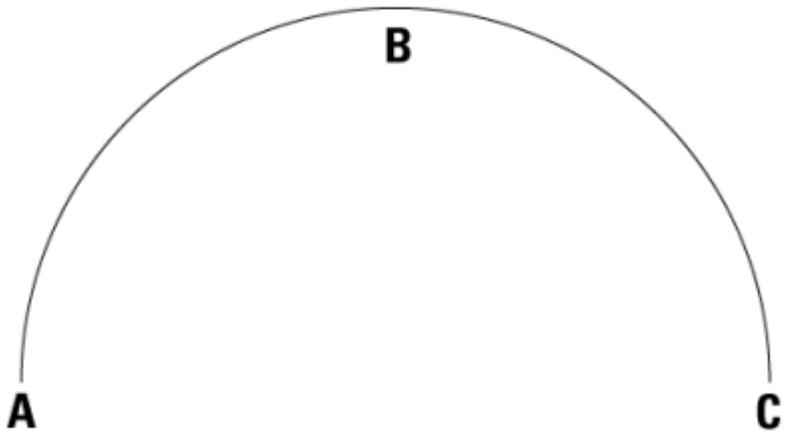
Question 10

In the picture above, which of the angles is braced more solidly?

Ⓐ Angle A

Ⓑ Angle B

Ⓒ Angle C



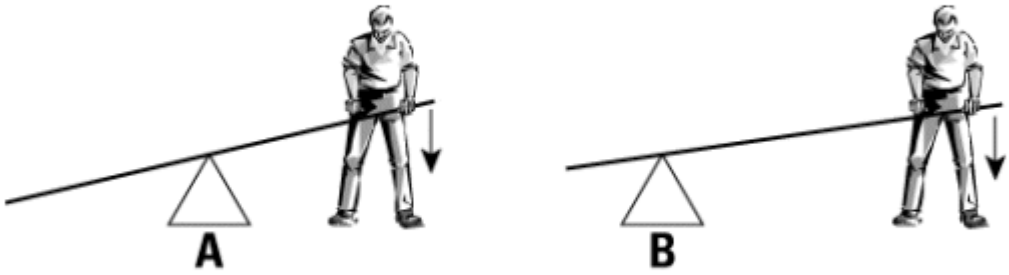
Question 11

An object is thrown in the air. At which point will it be traveling slowest?

Ⓐ Point A

Ⓑ Point B

Ⓒ Point C



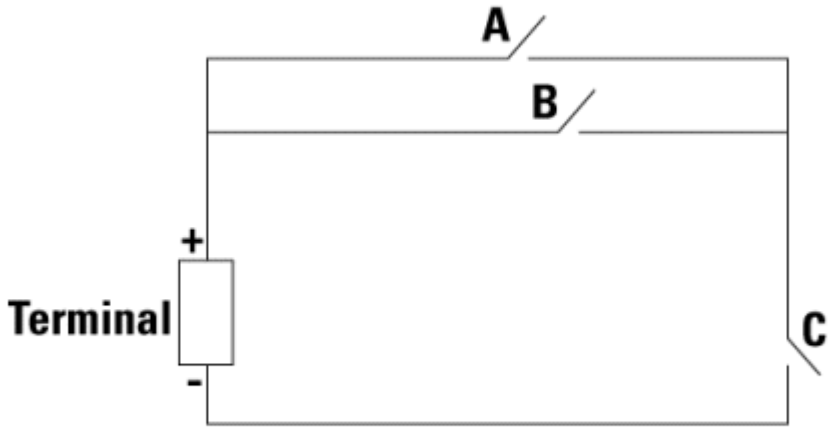
Question 12

In which of the two figures will the person require less force to lift a 50-pound weight?

Ⓐ Figure A

Ⓑ Figure B

Ⓒ Figures A and B equally



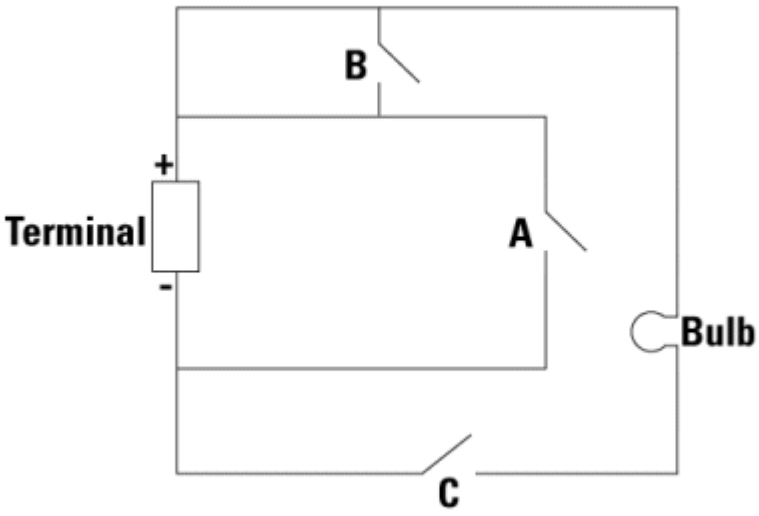
Question 13

Which of the three switches, if broken and cannot be closed, will prevent the flow of electricity in the terminal?

Ⓐ Switch A

Ⓑ Switch B

Ⓒ Switch C



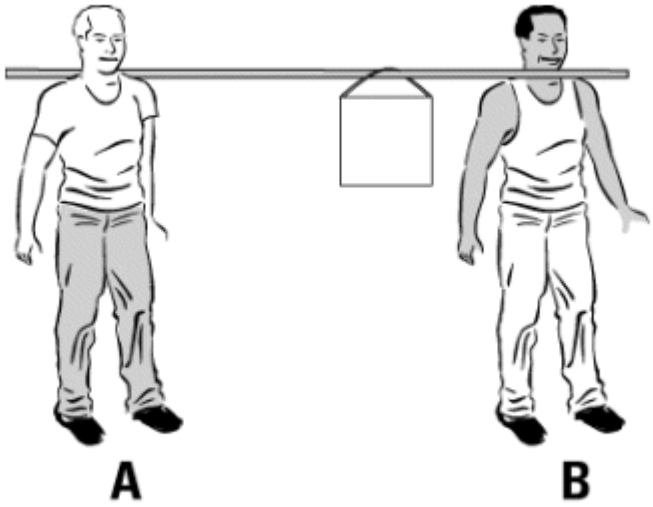
Question 14

Which switch should be closed to light the bulb?

Ⓐ Switch A

Ⓑ Switch B

Ⓒ Switch C



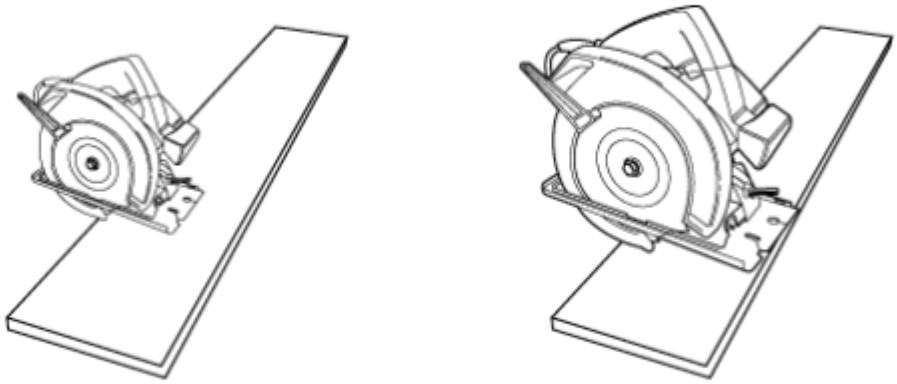
Question 15

The weight of the box is being carried entirely on the shoulders of the two persons shown above. Which of the two persons is carrying more weight?

Ⓐ Person A

Ⓑ Person B

Ⓒ Person A and Person B equally



A B

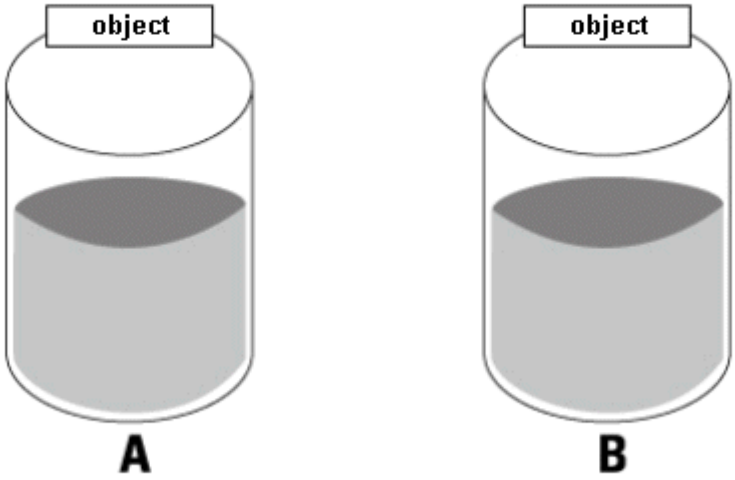
Question 16

Which of the two saws will allow you to cut faster?

Ⓐ Saw A

Ⓑ Saw B

Ⓒ Saws A and B equally



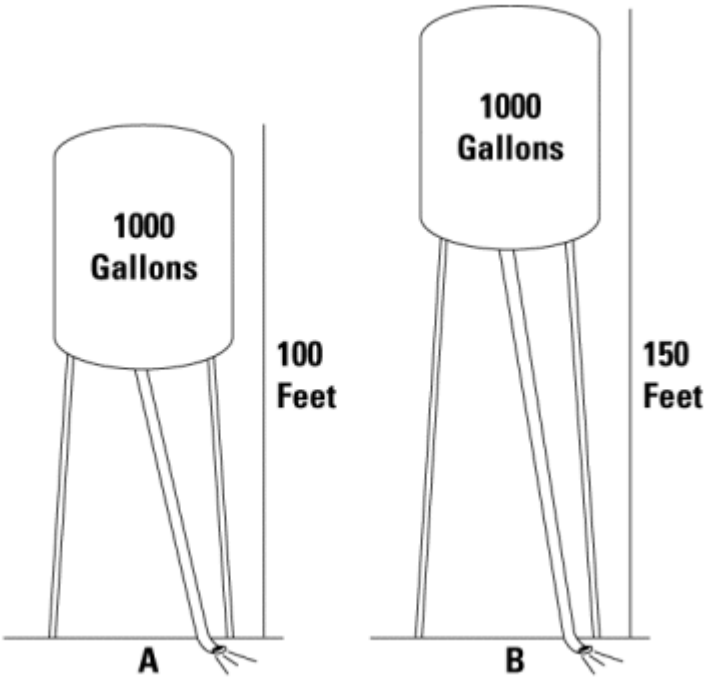
Question 17

The water in container A contains 50% salt. The water in container B contains 20% salt. In which of the two containers is the object more likely to float?

Ⓐ Container A

Ⓑ Container B

Ⓒ Containers A and B equally



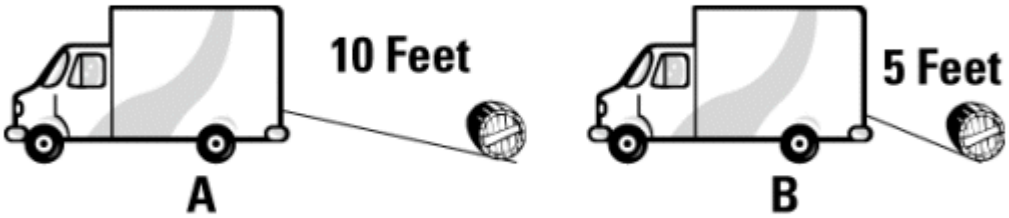
Question 18

Given two water towers with identical water tanks and identical amounts of water in each tank, which tower will have a greater water pressure coming out of the hose?

Ⓐ Tower A

Ⓑ Tower B

Ⓒ Towers A and B equally



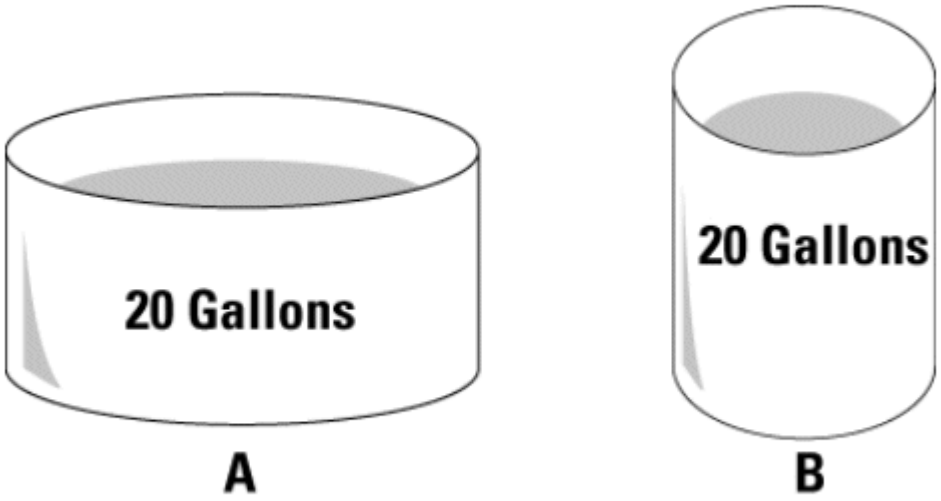
Question 19

Which situation requires more force to load the barrel onto the truck?

Ⓐ Situation A

Ⓑ Situation B

Ⓒ Situations A and B equally



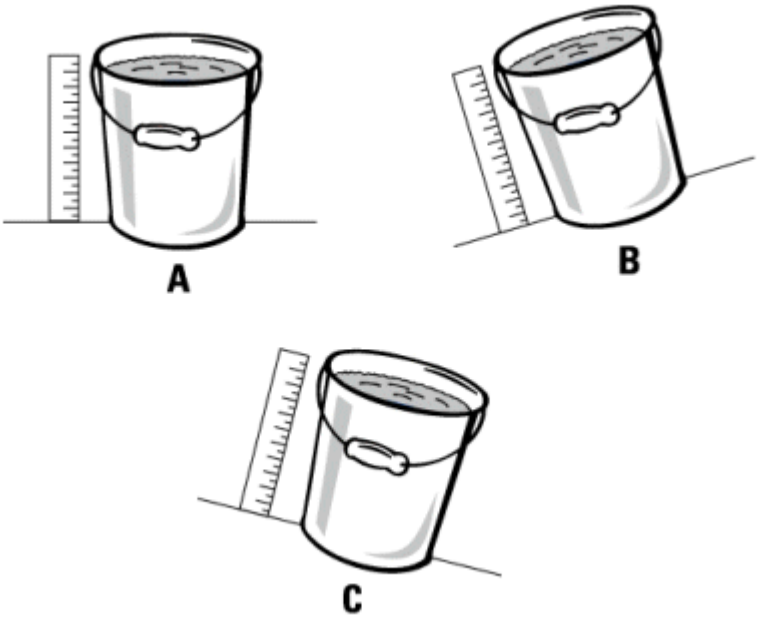
Question 20

In which of the two tanks will water that is boiled to the exact same temperature cool faster?

Ⓐ Tank A

Ⓑ Tank B

Ⓒ Tanks A and B equally



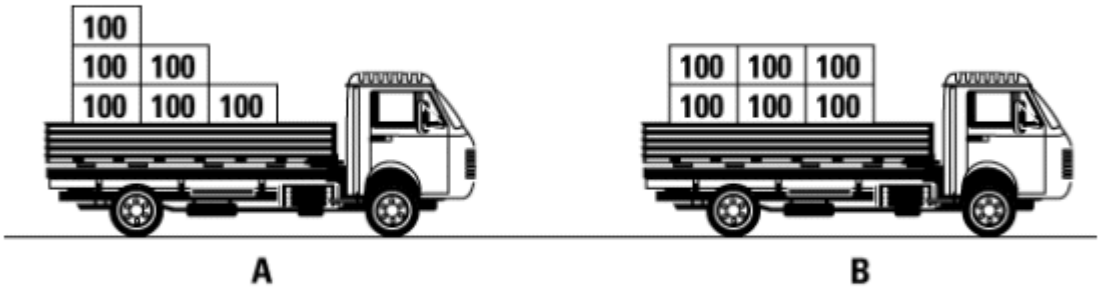
Question 21

In which of the three positions will it be easiest to accurately measure the amount of water in the bucket?

Ⓐ Position A

Ⓑ Position B

Ⓒ Position C



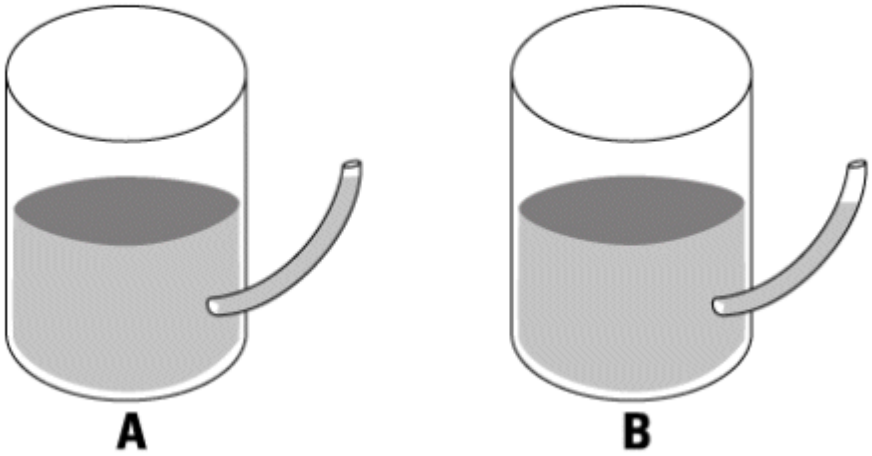
Question 22

Which of the two trucks carrying the same amount of weight is less likely to turn over when reaching a sharp curve?

Ⓐ Truck A

Ⓑ Truck B

Ⓒ Both trucks A and B



Question 23

Suppose that a valve between the bucket and hose has been closed. If the valve opened, which of the pictures would show a more accurate representation of the way in which the water will flow?

Ⓐ Picture A

Ⓑ Picture B

Ⓒ Neither picture A nor B

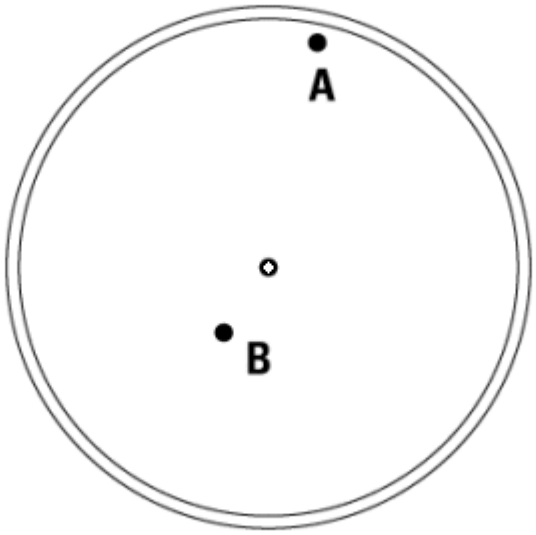
Question 24

Which of the two identical objects will travel a greater distance when the compression springs are released?

Ⓐ Object A

Ⓑ Object B

Ⓒ Objects A and B equally



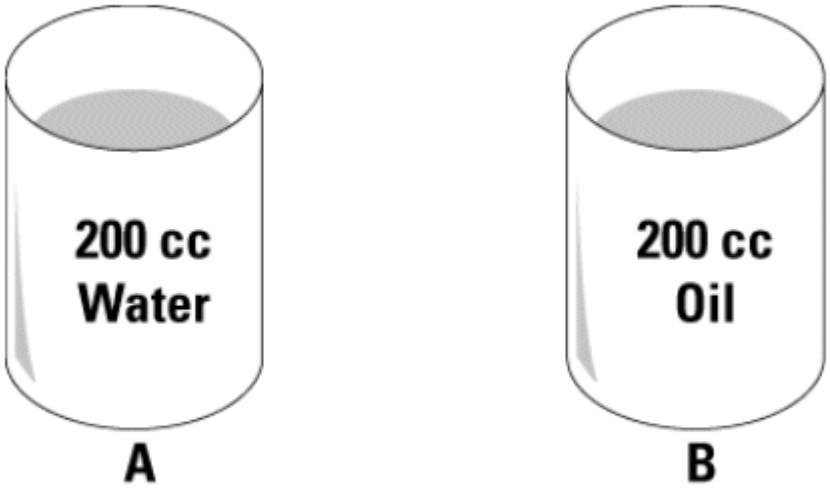
Question 25

Which point on the wheel is going to be traveling a greater distance when the wheel turns?

Ⓐ Point A

Ⓑ Point B

Ⓒ Points A and B equally



Question 26

Container A contains 200cc pure water and container B contains 200cc cooking oil. Assume an object is thrown into either of these two containers. In which container is the object more likely to float?

Ⓐ Container A

Ⓑ Container B

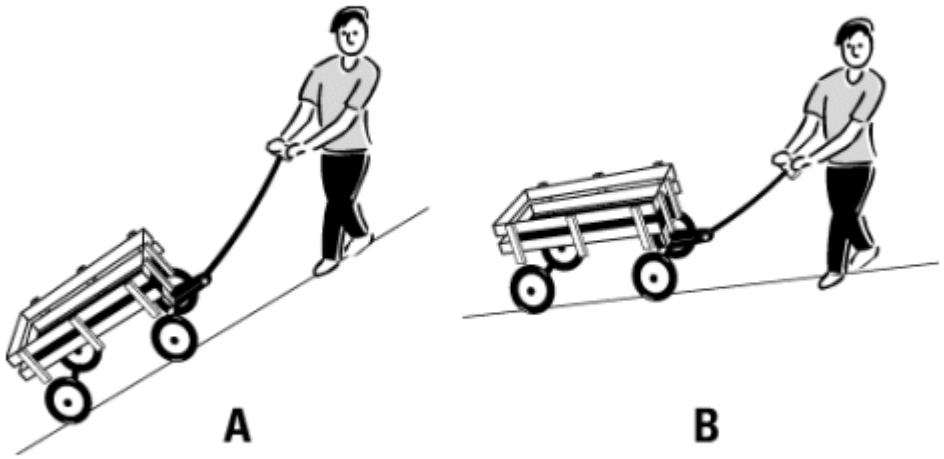
Ⓒ Containers A and B equally

End of Practice Test

Check your time and then move on to the practice test answers and explanations beginning on the next page.

Mechanical Concepts

Practice Test
Answers and Explanations



Question 1

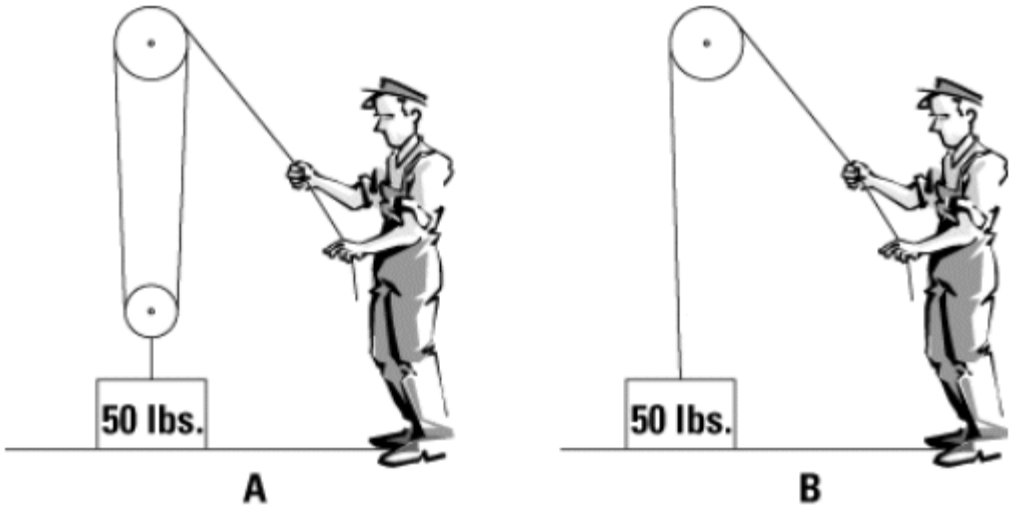
Which of the two wagons of equal weight requires less force to pull?

Ⓐ Wagon A

Ⓑ **Wagon B**

Ⓒ Wagons A and B equally

Explanation: B is the correct answer. In both pictures, the person has to overcome the force of gravity in order to pull the wagon up the hill. As the hill becomes less steep, less force is required to overcome the force of gravity.



Question 2

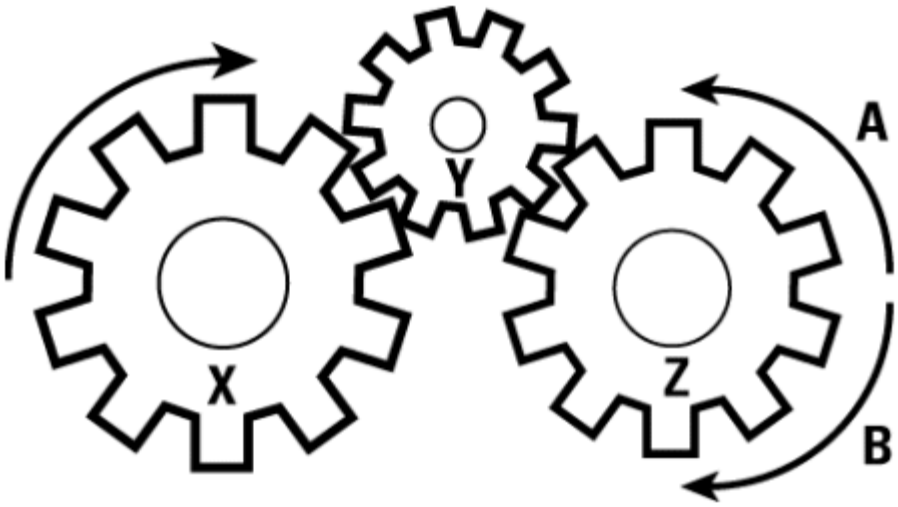
Which of the two persons will have to exert more effort to pull the box up?

Ⓐ Person A

Ⓑ Person B

Ⓒ Person A and Person B equally

Explanation: B is the correct answer. In picture A, we have two pulleys, whereas in picture B we have a single pulley. When you have a single pulley that does not move (as in picture B where the pulley is attached to the ceiling) the force needed to lift the weight does not change. In picture A, the two pulleys distribute the weight of the box equally among the two sides of the rope, half of the weight on each side. This means that the person in picture A has to apply only half the force to pull the box up.



Question 3

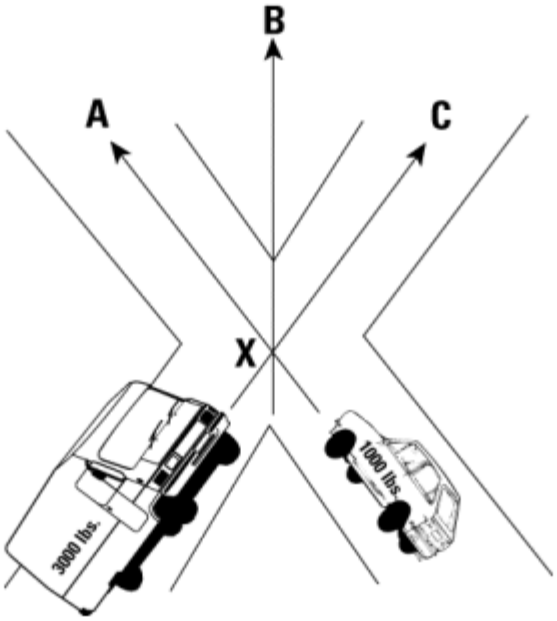
In which direction will gear Z spin if wheel X is spinning clockwise?

Ⓐ Direction A

Ⓑ Direction B

Ⓒ Both directions A and B

Explanation: B is the correct answer. Since gear X is turning clockwise, it will turn gear Y counterclockwise. Because gear Y is turning counterclockwise, it will turn gear Z clockwise, which is direction B.



Question 4

If the car and truck are moving at the same speed, in which direction will the truck tend to go when it collides with the car at point X?

Ⓐ Direction A

Ⓑ Direction B

Ⓒ Direction C

Explanation: C is the correct answer. This question deals with momentum. Momentum is a combination of weight and speed. It will determine the direction in which two colliding objects will go. The objects will move in the direction of the one with the larger product between weight and speed. The truck and car are driving at the same speed. The truck, however, is three times the weight of the car. Thus, after the collision, the truck will tend to continue in its original direction, in direction C.

Question 5

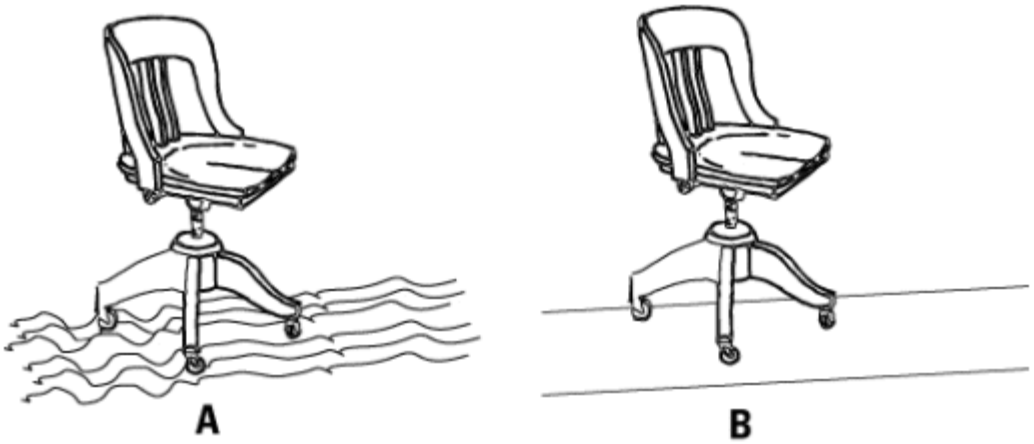
On which side of the pipe would the water speed be slower?

Ⓐ Side A

Ⓑ Side B

Ⓒ Sides A and B equally

Explanation: B is the correct answer. The volume flow rate of fluids is the amount of fluid that passes through the pipe in a given time. The flow rate going into the pipe must be equal to the flow rate coming out of it because of the incompressibility of liquids. Since the pipe is wider on the right side than it is on the left side, the water speed will be slower in the wider section of the pipe because more water can fit through this section.



Question 6

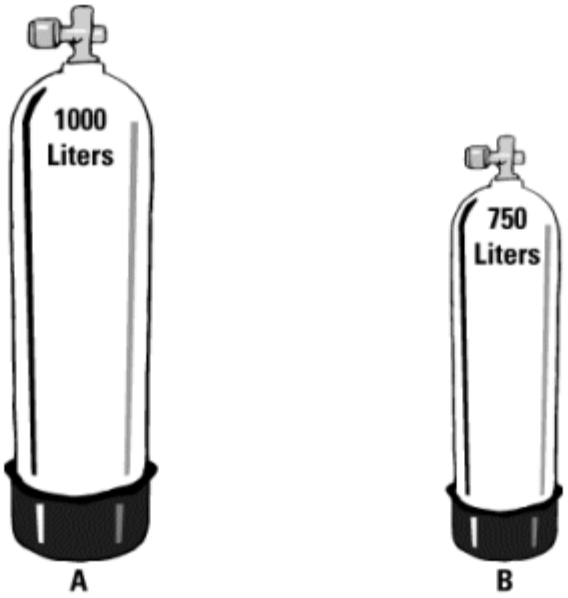
Which of the two chairs with equal size and weight would be easier to drag across the room?

Ⓐ Chair A

Ⓑ Chair B

Ⓒ Chairs A and B equally

Explanation: B is the correct answer. This question deals with the principle of friction. Friction is the resistance of one surface (e.g., a floor) sliding against another surface (e.g., a chair). The floor in picture B is smoother in comparison to the one in picture A. Thus, the force of friction in picture B is smaller, making it easier to drag the chair across the floor.



Question 7

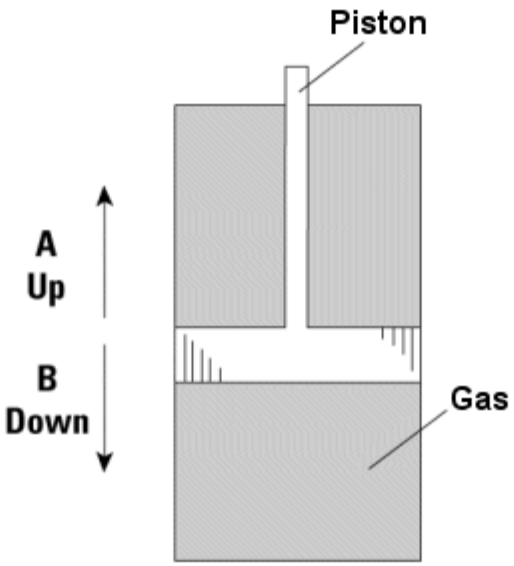
Two tanks with different capacities contain the same amount of oxygen, 500 liters. In which of the tanks will the gas pressure be greater?

Ⓐ Tank A

Ⓑ Tank B

Ⓒ Tanks A and B equally

Explanation: B is the correct answer. In this question, you have two gas tanks that can hold different amounts. Tank A can contain 1,000 liters and Tank B can contain 750 liters. When the same amount of gas is put into two different sizes of containers, the pressure of the gas is greater in the smaller container because there is less space for the gas molecules to move around.



Question 8

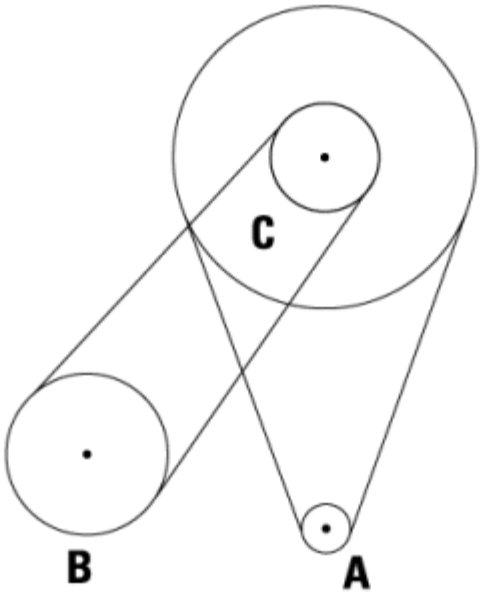
A spark ignites the gas within the cylinder. In which direction would the piston move?

Ⓐ **Up**

Ⓑ Down

Ⓒ Neither direction

Explanation: A is the correct answer. The ignition of the gas raises the temperature in the cylinder, which increases the pressure of the gas. The increased pressure of the gas forces the piston upward.



Question 9

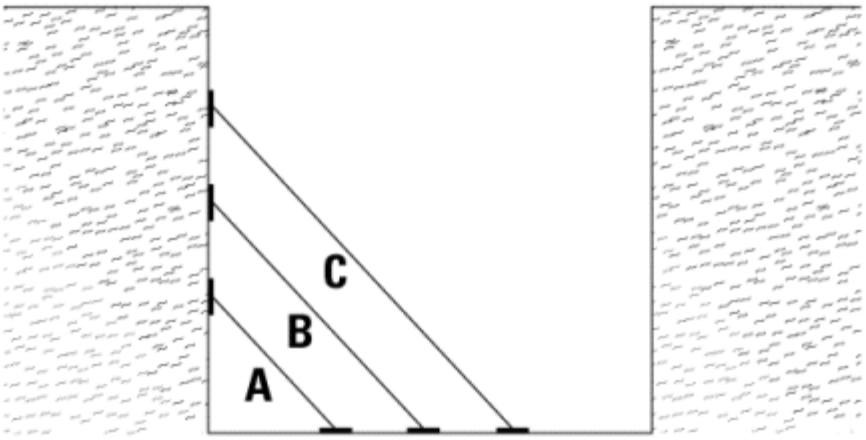
Among this arrangement of three pulleys, which pulley turns fastest?

Ⓐ **Pulley A**

Ⓑ Pulley B

Ⓒ Pulley C

Explanation: A is the correct answer. Pulley A has the smallest circumference and, therefore, is going to turn faster than the other larger pulleys.



Question 10

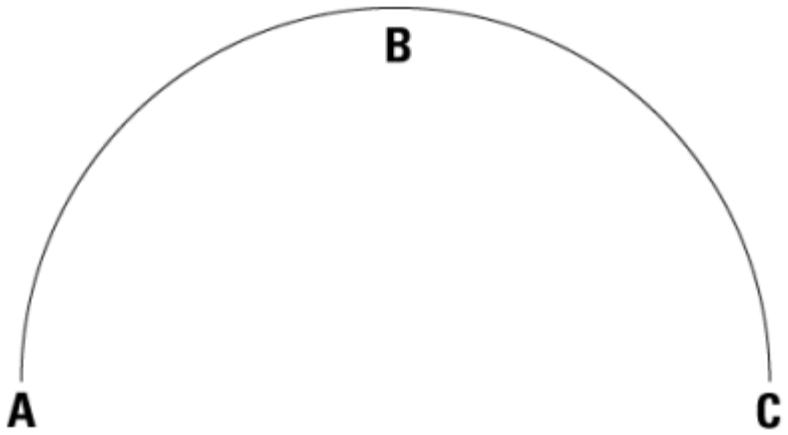
In the picture above, which of the angles is braced more solidly?

Ⓐ Angle A

Ⓑ Angle B

Ⓒ Angle C

Explanation: C is the correct answer. Pole C contacts higher on the wall than the other poles providing a more solid brace.



Question 11

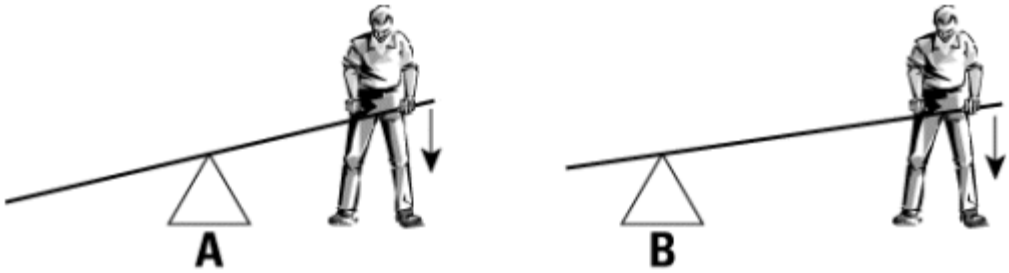
An object is thrown in the air. At which point will it be traveling slowest?

Ⓐ Point A

Ⓑ Point B

Ⓒ Point C

Explanation: B is the correct answer. At the height of the arc, the ball has no upward or downward momentum; thus, point B would be the point where the object's speed is the slowest.



Question 12

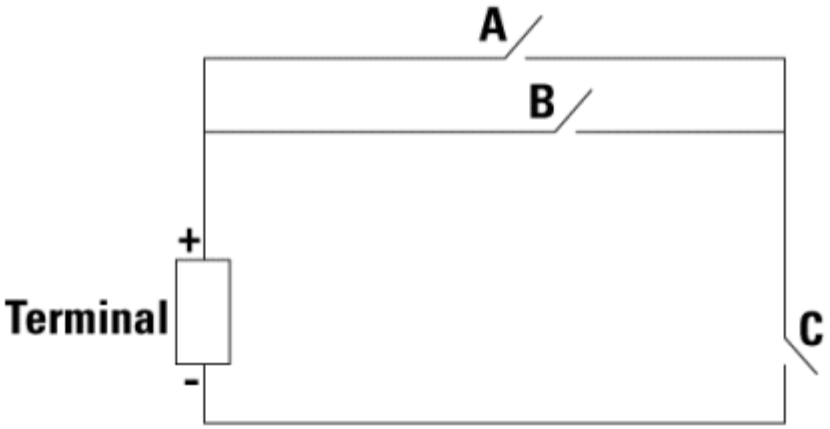
In which of the two figures will the person require less force to lift a 50-pound weight?

Ⓐ Figure A

Ⓑ Figure B

Ⓒ Figures A and B equally

Explanation: B is the correct answer. This question deals with levers. A lever is a simple machine that uses a fulcrum (pivot point) to increase the effect of effort. The fulcrum, or pivot point is immovable. The area to the right of the fulcrum is called the effort and the area to the left of the fulcrum (where the weight is placed) is called the resistance. As a rule, when the ratio of the effort to the resistance is greater, the amount of force needed to lift an object decreases. Looking at the two drawings in this example, you can see that for person A, the effort and the resistance are nearly equal, while person B has a shorter resistance and a longer effort. Therefore, person B requires less force to lift the weight.



Question 13

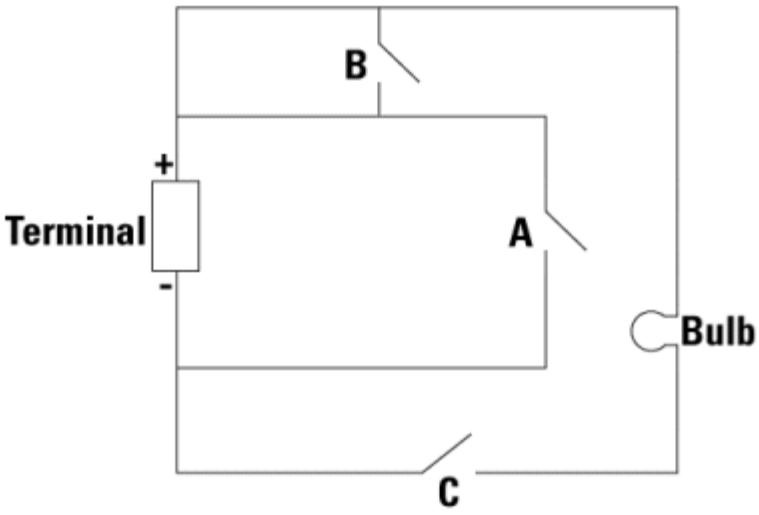
Which of the three switches, if broken and cannot be closed, will prevent the flow of electricity in the terminal?

Ⓐ Switch A

Ⓑ Switch B

Ⓒ Switch C

Explanation: C is the correct answer. Electricity must be sent along a path of a closed circuit. If switch A is broken, electricity can flow through switch B. If switch B is broken, electricity can flow through switch A. However, if switch C is broken, electricity does not have an alternate route and, thus, will not be able to flow in the terminal.



Question 14

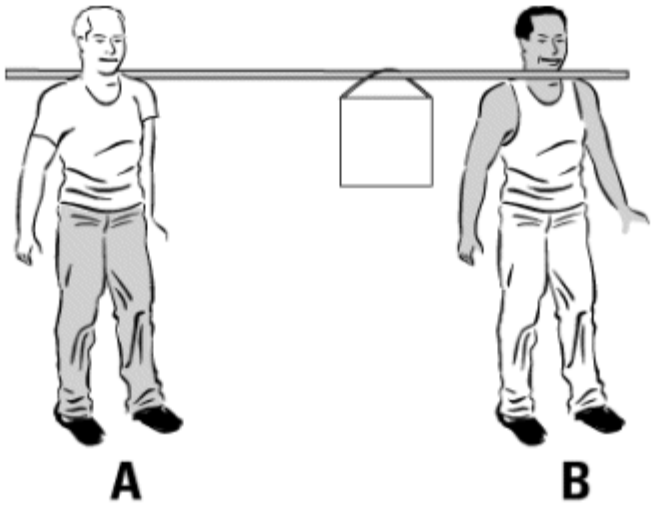
Which switch should be closed to light the bulb?

Ⓐ Switch A

Ⓑ Switch B

Ⓒ Switch C

Explanation: C is the correct answer. In order for the bulb to light, electricity must flow in a closed circuit. The only way electricity can flow from pole to pole through the bulb is by closing switch C.



Question 15

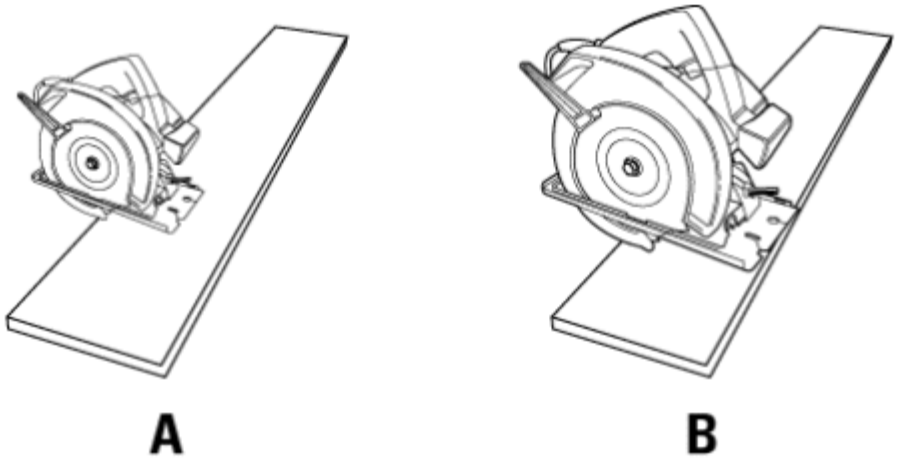
The weight of the box is being carried entirely on the shoulders of the two persons shown above. Which of the two persons is carrying more weight?

Ⓐ Person A

Ⓑ Person B

Ⓒ Person A and Person B equally

Explanation: B is the correct answer. For the weight to be equally distributed, the object being carried needs to be centered. In the present question, the weight is not centered, rather it is closer to Person B. Thus, Person B is carrying more of the weight.



Question 16

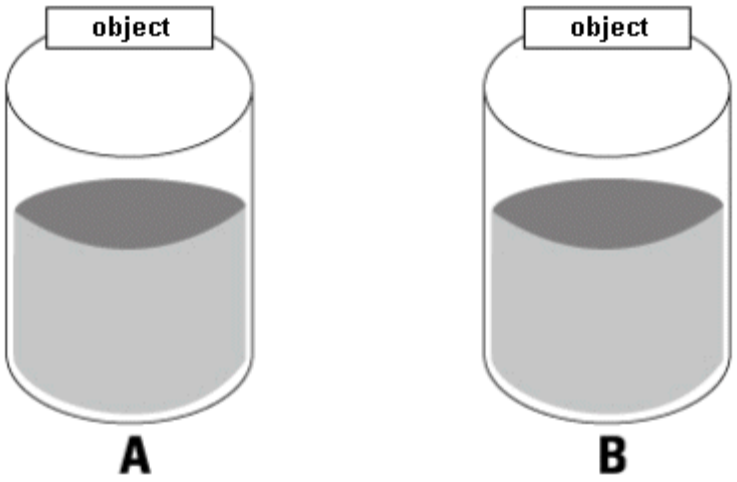
Which of the two saws will allow you to cut faster?

Ⓐ Saw A

Ⓑ Saw B

Ⓒ Saws A and B equally

Explanation: B is the correct answer. Saw B is larger which means it also has a larger blade. One revolution of the Saw B will cover a greater distance, thus, cutting faster.



Question 17

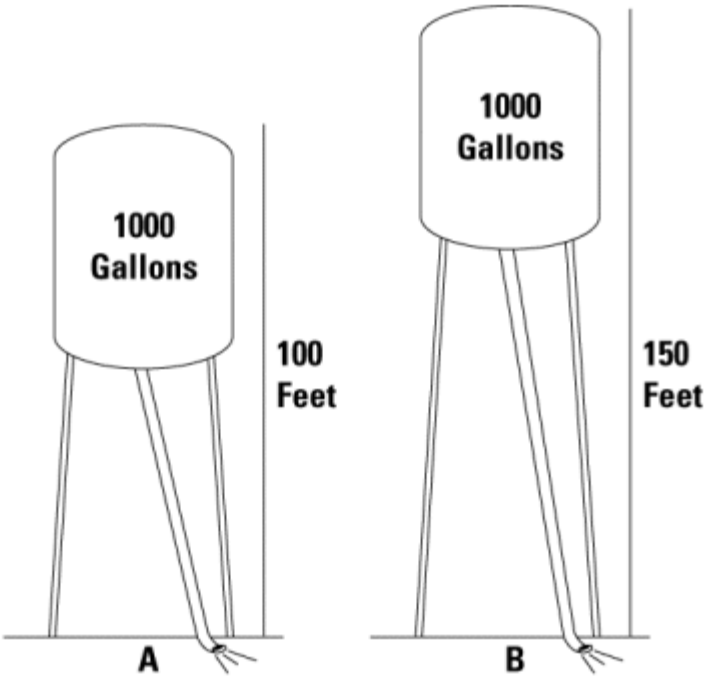
The water in container A contains 50% salt. The water in container B contains 20% salt. In which of the two containers is the object more likely to float?

Ⓐ **Container A**

Ⓑ Container B

Ⓒ Containers A and B equally

Explanation: A is the correct answer. Adding salt to water makes the water more dense. The more salt that is added, the denser the water gets. The density of the water in container A containing 50% salt is greater than that of the water in container B containing only 20% salt. The likelihood of an object to float increases as the density of the water increases. Therefore, the object is more likely to float in container A than in container B.



Question 18

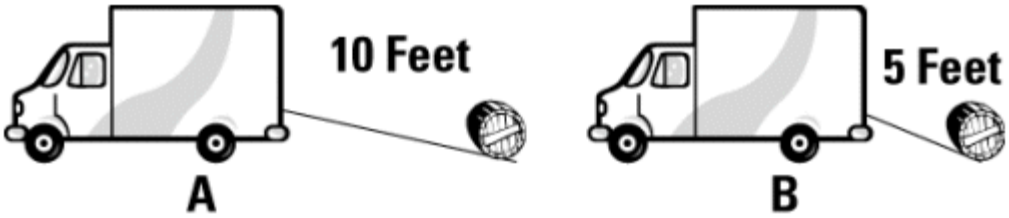
Given two water towers with identical water tanks and identical amounts of water in each tank, which tower will have a greater water pressure coming out of the hose?

Ⓐ Tower A

Ⓑ Tower B

Ⓒ Towers A and B equally

Explanation: B is the correct answer. Water pressure in a closed condition, such as water flowing through a hose, is impacted by several forces. In this situation, gravity, which is pulling the water down the hoses and the height of the towers are both factors. The force of the gravity is the same in both situations, but as the height of the tower increases, water pressure increases.



Question 19

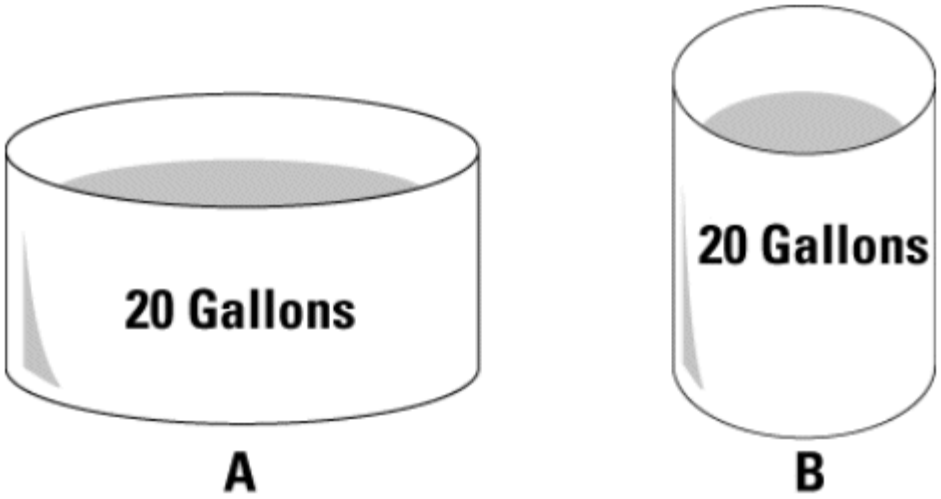
Which situation requires more force to load the barrel onto the truck?

Ⓐ Situation A

Ⓑ Situation B

Ⓒ Situations A and B equally

Explanation: B is the correct answer. The force required to move the barrel onto the truck is dependent upon the length of the ramp. The longer ramp requires less force because the angle of the incline is smaller. The shorter ramp requires more force because the angle of incline is steeper due to its length.



Question 20

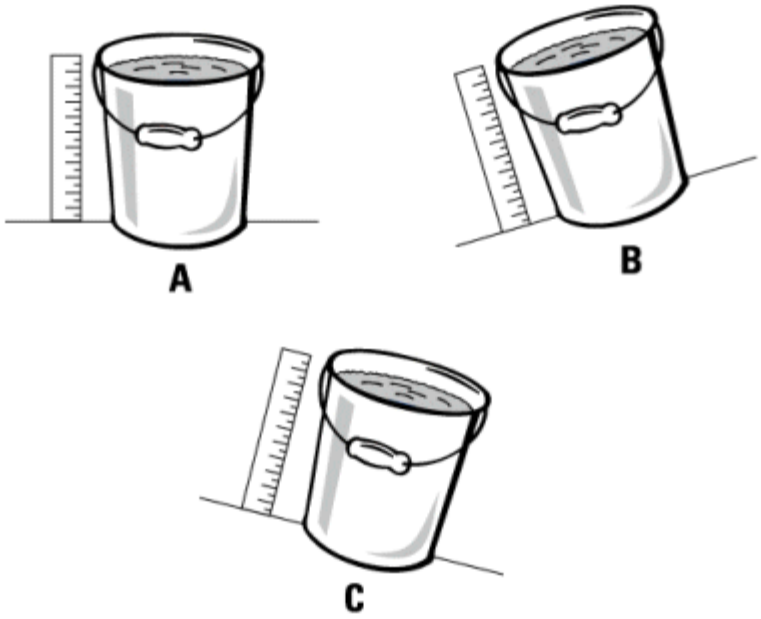
In which of the two tanks will water that is boiled to the exact same temperature cool faster?

Ⓐ **Tank A**

Ⓑ Tank B

Ⓒ Tanks A and B equally

Explanation: A is the correct answer. When more of a hot liquid's surface is in contact with cooler air, the liquid cools down faster.



Question 21

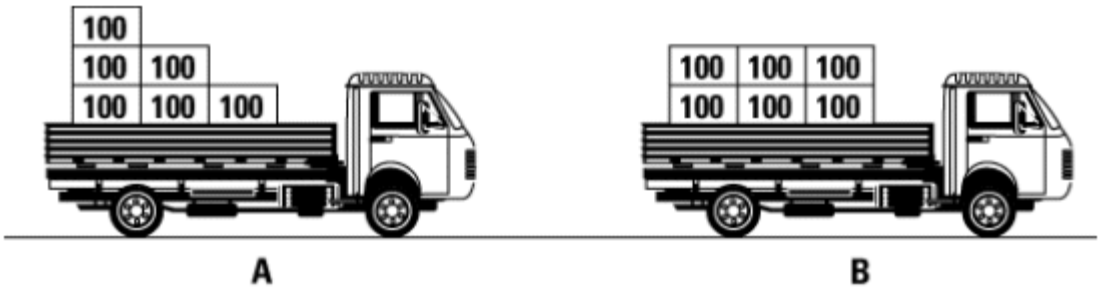
In which of the three positions will it be easiest to accurately measure the amount of water in the bucket?

Ⓐ **Position A**

Ⓑ Position B

Ⓒ Position C

Explanation: A is the correct answer. Measuring liquids is easiest on level surfaces. On unlevel surfaces (such as shown in pictures B and C) water tends to shift in the direction of the incline, making measurement with a ruler inaccurate.



Question 22

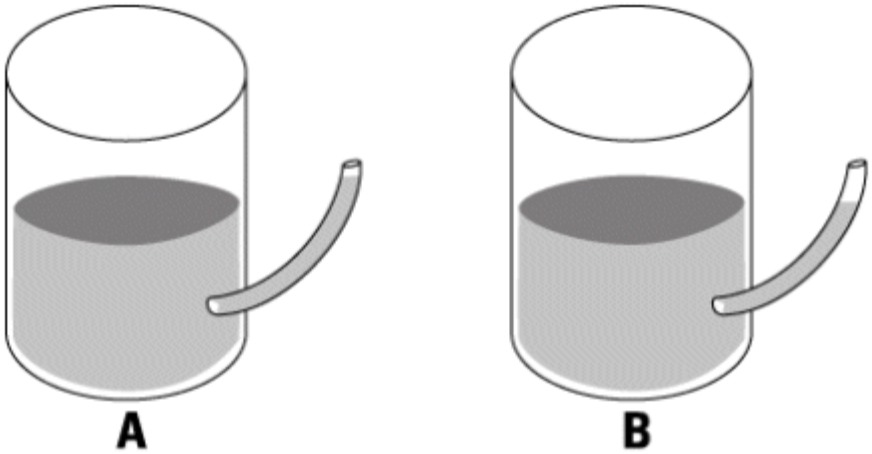
Which of the two trucks carrying the same amount of weight is less likely to turn over when reaching a sharp curve?

Ⓐ Truck A

Ⓑ Truck B

Ⓒ Both trucks A and B

Explanation: B is the correct answer. When the weight of cargo is evenly distributed (such as in truck B) and does not shift around during travel, a vehicle is more stable on the road. On the contrary, a vehicle with an uneven distribution of weight (such as the truck in A) is less stable. Such a vehicle is more likely to turn over when reaching a curve in the road.



Question 23

Suppose that a valve between the bucket and hose has been closed. If the valve opened, which of the pictures would show a more accurate representation of the way in which the water will flow?

Ⓐ Picture A

Ⓑ Picture B

Ⓒ Neither picture A nor B

Explanation: B is the correct answer. As a rule, water always seeks its own level. Thus, the water in the hose will decrease until it is exactly the same level as the water in the bucket.

Question 24

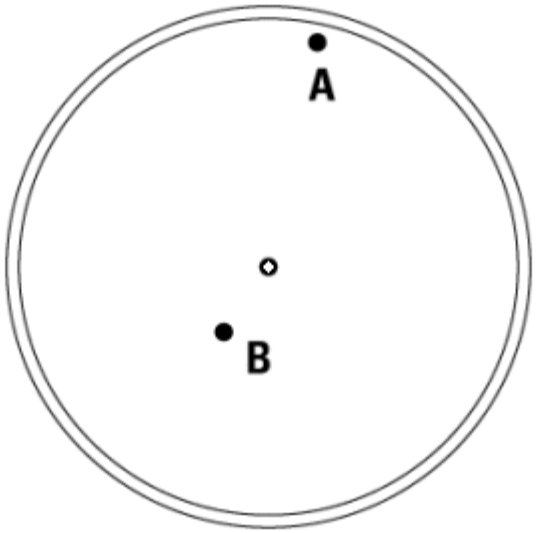
Which of the two identical objects will travel a greater distance when the compression springs are released?

Ⓐ Object A

Ⓑ Object B

Ⓒ Objects A and B equally

Explanation: B is the correct answer. When a spring is compressed (or stretched), a force called restoring force will push to return the spring to its normal length. The more compressed (or stretched) the spring is, the larger this pushing force. The spring in picture B is more compressed than the one in picture A. This makes the force pushing the object (resulting from the restoring force) in picture B larger than the one in picture A, thus, making the object travel farther when the spring is released.



Question 25

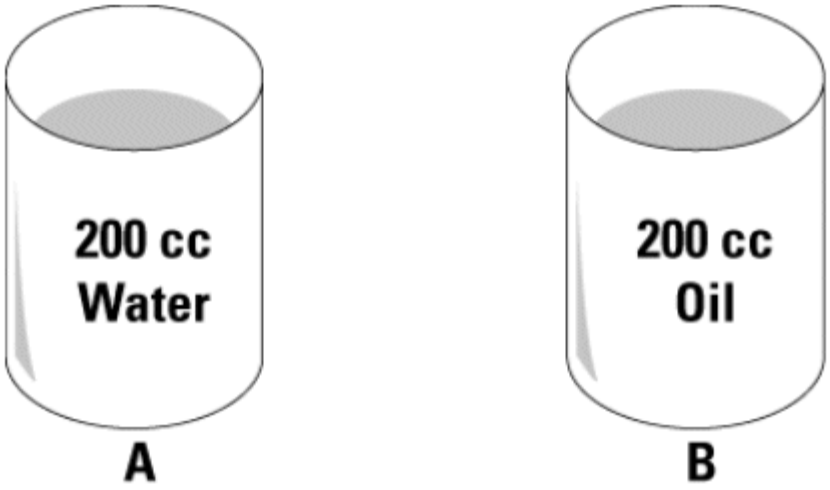
Which point on the wheel is going to be traveling a greater distance when the wheel turns?

Ⓐ **Point A**

Ⓑ Point B

Ⓒ Points A and B equally

Explanation: A is the correct answer. The further from the center of the wheel a point is, the greater distance it will travel.



Question 26

Container A contains 200cc pure water and container B contains 200cc cooking oil. Assume an object is thrown into either of these two containers. In which container is the object more likely to float?

Ⓐ **Container A**

Ⓑ Container B

Ⓒ Containers A and B equally

Explanation: A is the correct answer. Water has a greater density than cooking oil. When put into liquid, objects are more likely to float in a liquid that is more dense; therefore, an object is more likely to float in the container with water.

Edison Electric Institute

Construction and Skilled Trades Selection System – Revised (CAST-R)

Reading for Comprehension

Practice Test

These practice tests are for informational purposes only, and are not a guarantee that an applicant will pass a related test.

Reading for Comprehension Practice Test

The Reading for Comprehension test measures a candidate's ability to read and understand written material.

This practice test is similar in content and structure to the actual test. We recommend that you keep track of your time while taking the practice test so that you know how long it takes to complete it in relation to the time limit on the actual test. Answers and explanations for the practice test questions are provided at the end and are meant to be references once you complete the practice test.

Directions

This practice test includes three passages, each followed by questions about the passage. You are to read each passage and then answer the corresponding questions.

All questions should be answered based strictly on the information presented in the passage. Do not answer on the basis of experiences you have had, or any information not specifically presented in the passage. To do so might result in choosing an incorrect answer.

For each question, select the best answer from the choices given. Answer all the questions regarding one passage before moving on to the next. You may look back at the passage while you answer the question. This practice test has **24 questions** and the suggested testing time is **23 minutes**.

Passage 1 (Questions 1-8)

Static Electricity

Most of us remember a painful incident when sparks blasted our hands after touching metal objects. Do you remember the game we used to play as kids where we would rub a balloon against a wool sweater and then see if the balloon would stick to the wall? These are examples of "static electricity." Though static electricity is a common phenomenon, its cause is often misunderstood.

Static electricity can result from the friction of two objects rubbing against each other, like the sole of your shoes against the carpet. However, friction is not required for static electricity to occur. It is a common misconception that friction is required to create static electricity. It is true that friction can increase the likelihood of static electricity, but it is not the cause. The true cause is the separation of negative and positive charges.

Every object is composed of a collection of positive and negative electric charges. Usually, the number of positive charges and the number of negative charges is equal. Static electricity (more correctly called "net electric charge") occurs whenever the number of positive and negative electric charges is not perfectly equal.

Let's take the example of walking across a carpeted room. When we walk, the soles of our shoes absorb some negative charge found in the carpet. We leave behind electric positive footprints, and our bodies acquire some negative charges. This process goes on for some time until our body achieves a high level of negative electric charge. The next time that we touch someone or some object, we will get zapped as the imbalanced charge is shared between us and the other person or object. The spark is painful because it is extremely hot. It creates tiny burned areas on our skin that hurt for a couple of seconds.

There is a simple way to avoid shocks caused by static electricity. Before touching objects such as a doorknob or a car door, first touch the object with a car key. The static electric sparks will blast the key rather than your hand and will painlessly discharge from your body. After the static electricity has been discharged, you can safely touch metal objects. Of course, if you walk around on the carpet again, you will once again acquire static electricity.

Question 1

Why is touching a doorknob with a key considered a simple way to avoid static electricity?

Ⓐ The key will discharge your body without pain.

Ⓑ The key will prevent your body from getting charged.

Ⓒ The static electric sparks will blast the key and not your hand.

Ⓓ The key charges you with negative electricity.

Question 2

When does static electricity occur?

Ⓐ Whenever the number of positive and the number of negative charges in a person's body is out of balance

Ⓑ Whenever people touch a car knob with a key or any other metal object

Ⓒ Any time there is a friction between shoe soles and a rug or a carpet

Ⓓ In the winter when the air is very dry and the chance of free sparks in the air increases

Question 3

What is "net electric charge"?

Ⓐ The number of positive and negative electric charges in one's body

Ⓑ An alternative name for static electricity

Ⓒ The electric positive footprints we leave behind when we walk

Ⓓ The total likelihood of getting zapped

Question 4

Which of the following statements is not true?

Ⓐ Friction is not necessary for static electricity to happen.

Ⓑ When the number of positive and negative electric charges is equal, static electricity will not happen.

Ⓒ Static electricity is painful because it is hot and burns the skin.

Ⓓ Static electricity is caused by friction.

Question 5

The last paragraph of the passage deals primarily with:

Ⓐ Describing ways to prevent static electricity

Ⓑ Describing ways to prevent being zapped by static electricity

Ⓒ Describing ways to grab a metal door knob

Ⓓ Warning people against sitting in plastic car seat

Question 6

What is the main idea of the entire passage?

Ⓐ Educate people about static electricity

Ⓑ Prevent people from dragging their feet while walking on carpets

Ⓒ Tell a story of people who were hurt by static electricity

Ⓓ Warn people about static electricity

Question 7

How common is "static electricity"?

Ⓐ It is very common.

Ⓑ It is quite rare.

Ⓒ It happens only in winter.

Ⓓ The paragraph does not provide sufficient information to answer this question.

Question 8

What line from the passage best illustrates the fact that most people don't know what causes static electricity?

Ⓐ Though static electricity is a common phenomenon its cause is often misunderstood.

Ⓑ There is a simple way to avoid shocks caused by static electricity.

Ⓒ Every object is composed of a collection of positive and negative electric charges.

Ⓓ Static electricity is usually caused by friction of two objects against each other.

Passage 2 (Questions 9-16)

Thomas Alva Edison

Thomas Alva Edison, an American inventor, was born in February 1847, as the seventh and last child of Samuel and Nancy Edison. Contrary to popular belief, Thomas Edison was not born into poverty in a backwater mid-western frontier town. Actually, he was born to middle-class parents in the lively port of Milan, Ohio, a community that next to Odessa, Russia, was the largest wheat shipping center in the world. In 1854, when little Edison was seven years old, his family moved to Port Huron, Michigan.

During childhood Edison learned eagerly by asking questions and reading numerous books. Unable to adapt himself to the routine of school, he quit three months after beginning when his teacher called him "addled." His mother, a former teacher, continued his education through home schooling. At the age of nine she gave him his first physics book. This book described scientific experiments that Edison could perform himself. Young Edison was hooked! The next year he set up a chemical laboratory in his family's basement.

By the age of 12, Edison had become a virtual adult. He had talked his parents into letting him go to work selling newspapers, snacks, and candy on the railroad. To avoid wasting time, he moved his basement laboratory to the baggage car and read in the public library during layovers in Detroit.

Edison filed papers with various inventions, from an electric vote recorder to a diplex and quadruplex telegraph. However, the invention for which he is best known is the commercial introduction of the incandescent lamp. He did not invent the lamp, but he did devise and manufacture the first lamp and electrical distribution system that could be operated economically together. This was by far much more significant than the invention of the lamp itself in promoting the general use of electricity.

Edison was awarded a special Congressional gold medal in 1928 for his many contributions to the nation's welfare. He died at 9 PM in October 1931. Recognizing that his death marked the end of an era in the progress of civilization, countless individuals, communities, and corporations throughout the world dimmed their lights, or briefly turned off their electric power in his honor on the day he was laid to rest.

Question 9

Which of the following sentences does not accurately describe Edison's background?

Ⓐ He was the youngest child in the family.

Ⓑ He was born to a poor family.

Ⓒ His mother was a school teacher.

Ⓓ His first job was selling goods on a train.

Question 10

At what age did Edison start his laboratory experiments?

Ⓐ 7

Ⓑ 9

Ⓒ 10

Ⓓ 12

Question 11

Which of the following inventions did Edison not invent?

Ⓐ Electric vote recorder

Ⓑ Diplex telegraph

Ⓒ Quadruplex telegraph

Ⓓ Incandescent lamp

Question 12

Why is Edison's work on the incandescent lamp considered to be very significant?

Ⓐ He was the first man to invent a lamp.

Ⓑ It promoted the use of electricity.

Ⓒ He was awarded with a Congressional gold medal for it.

Ⓓ It made people acknowledge his importance as an inventor.

Question 13

According to the first paragraph, what was Milan, Ohio famous for?

Ⓐ A wheat shipping center

Ⓑ The birth place of Edison

Ⓒ Being a mid-western frontier town

Ⓓ Being close to Port Huron, Michigan

Question 14

What is the main idea of the entire passage?

Ⓐ To describe Edison as a child

Ⓑ Tell us that Edison was awarded a congressional gold medal

Ⓒ Inform us about Thomas Edison's life

Ⓓ Describe Edison's inventions

Question 15

What does it mean in the third paragraph when it says that Edison became "a virtual adult?"

Ⓐ Edison looked like an adult.

Ⓑ Edison dressed like an adult.

Ⓒ Edison worked like an adult.

Ⓓ Edison liked to watch adults.

Question 16

Where did Edison get most of his education?

Ⓐ From books and studying at home

Ⓑ School

Ⓒ Selling newspaper at the train station

Ⓓ His brothers

Passage 3 (Questions 17-24)

Natural Gas

Natural gas is a vital component of the world's supply of energy. It is known to be one of the safest, most environmentally friendly, and useful energy sources known to man. Despite its importance there are many misconceptions associated with natural gas. Many of these misconceptions are due to the variety of uses of the word “gas.” For example, we use gas to fuel our cars and motorcycles, and we barbecue on gas grills. These “gases,” however, are not natural gas. They are other substances of gas such as fossil and propane.

Natural gas is nothing new. In fact, most of the natural gas that is found today in reservoirs underneath the earth was manufactured millions and millions of years ago. There are many different theories as to its origin. The most widely accepted theory suggests that natural gas is formed when organic matter (such as the remains of plants and animals) is compressed under the earth's surface at a very high pressure for a very long time. Natural gas can also be formed when specific micro-organisms chemically break down organic matter. A third way in which natural gas can be produced is called the abiogenic process. This formation of natural gas is the result of an underground interaction between organic matter, gases, and minerals in a high-pressure environment.

Due to its methods of production, natural gas is usually found underneath the surface of the earth. Once it is formed it will rise toward the surface of the earth through loose, shale-type rock and other materials. Some of the gas will simply rise to the surface and dissipate into air. A great deal of this gas, however, will be “trapped” under the ground and accumulate there. This happens when a rock named “impermeable sedimentary” forms a “dome” shape like an umbrella that catches all the natural gas that is floating to the surface. With natural gas trapped under the earth in this fashion, it can be recovered by drilling a hole through the rock. The gas that is under great pressure then flows to the surface where it is collected.

Most of the natural gas reserves are located in the Middle East (34% of the world's total) and Europe and the former USSR (42% of the world's total reserves). The United States possesses 3% of the world's total natural gas reserves. Most of the gas found in the United States is concentrated in relatively distinct geographical areas; primarily around Texas and the Gulf of Mexico.

Question 17

Where are most of the natural gas reservoirs in the world located?

Ⓐ Russia

Ⓑ Middle East

Ⓒ Europe and former USSR

Ⓓ Texas and the Gulf of Mexico

Question 18

In the passage it is mentioned that, in order to recover gas, a hole in the ground is drilled. After the hole is drilled, what is usually used in order to bring the gas to the surface?

Ⓐ A special gas pump

Ⓑ The force of the gas's own pressure

Ⓒ Dome-shaped rocks named “impermeable sedimentary”

Ⓓ Generators

Question 19

Which of the following *could* be a common use of natural gas?

Ⓐ Cooking

Ⓑ Barbequing

Ⓒ Car fueling

Ⓓ Motorcycle fueling

Question 20

According to the most widely accepted theory dealing with the origin of gas, how is natural gas created?

Ⓐ Underground high-pressured interaction between minerals and gases

Ⓑ A process of highly pressured compressing of organic matter over a long period of time

Ⓒ Microorganisms chemically break down organic matter

Ⓓ A chemical interaction between underground remains of plants and animals

Question 21

Which of the following is not true about natural gas?

Ⓐ It is a very important source of energy.

Ⓑ There are a lot of false beliefs associated with natural gas.

Ⓒ Natural gas is most likely found under the earth's surface.

Ⓓ Natural gas is hard to find.

Question 22

Of the following, which is the best title for this passage?

Ⓐ Where can we find natural gas

Ⓑ Natural gas - common misconceptions

Ⓒ Natural gas - how it is formed and where it is found

Ⓓ Natural gas - past, present, and future

Question 23

The formation of natural gas would not be possible without:

Ⓐ Organic matter

Ⓑ Dome-shaped rocks

Ⓒ Fossil and propane

Ⓓ Reservoirs

Question 24

What does it mean in the first paragraph when it says that natural gas is "environmentally friendly?"

Ⓐ It does not pollute.

Ⓑ It is sufficient.

Ⓒ It is environmental.

Ⓓ It is easy to find.

End of Practice Test

Check your time and then move on to the practice test answers and explanations beginning on the next page.

Reading for Comprehension

Practice Test
Answers and Explanations

Passage 1 (Questions 1-8)

Static Electricity

Most of us remember a painful incident when sparks blasted our hands after touching metal objects. Do you remember the game we used to play as kids where we would rub a balloon against a wool sweater and then see if the balloon would stick to the wall? These are examples of "static electricity." Though static electricity is a common phenomenon, its cause is often misunderstood.

Static electricity can result from the friction of two objects rubbing against each other, like the sole of your shoes against the carpet. However, friction is not required for static electricity to occur. It is a common misconception that friction is required to create static electricity. It is true that friction can increase the likelihood of static electricity, but it is not the cause. The true cause is the separation of negative and positive charges.

Every object is composed of a collection of positive and negative electric charges. Usually, the number of positive charges and the number of negative charges is equal. Static electricity (more correctly called "net electric charge") occurs whenever the number of positive and negative electric charges is not perfectly equal.

Let's take the example of walking across a carpeted room. When we walk, the soles of our shoes absorb some negative charge found in the carpet. We leave behind electric positive footprints, and our bodies acquire some negative charges. This process goes on for some time until our body achieves a high level of negative electric charge. The next time that we touch someone or some object, we will get zapped as the imbalanced charge is shared between us and the other person or object. The spark is painful because it is extremely hot. It creates tiny burned areas on our skin that hurt for a couple of seconds.

There is a simple way to avoid shocks caused by static electricity. Before touching objects such as a doorknob or a car door, first touch the object with a car key. The static electric sparks will blast the key rather than your hand and will painlessly discharge from your body. After the static electricity has been discharged, you can safely touch metal objects. Of course, if you walk around on the carpet again, you will once again acquire static electricity.

Question 1

Why is touching a doorknob with a key considered a simple way to avoid static electricity?

Ⓐ The key will discharge your body without pain.

Ⓑ The key will prevent your body from getting charged.

Ⓒ The static electric sparks will blast the key and not your hand.

Ⓓ The key charges you with negative electricity.

Explanation: C is the correct answer. The third sentence in paragraph five states that "The static electric sparks will blast the key rather than your hand and will painlessly discharge from your body."

Question 2

When does static electricity occur?

Ⓐ Whenever the number of positive and the number of negative charges in a person's body is out of balance

Ⓑ Whenever people touch a car knob with a key or any other metal object

Ⓒ Any time there is a friction between shoe soles and a rug or a carpet

Ⓓ In the winter when the air is very dry and the chance of free sparks in the air increases

Explanation: A is the correct answer. The third sentence in the third paragraph states that "Static electricity (more correctly called "net electric charge") occurs whenever the number of positive and negative electric charges is not perfectly equal."

Question 3

What is "net electric charge"?

Ⓐ The number of positive and negative electric charges in one's body

Ⓑ An alternative name for static electricity

Ⓒ The electric positive footprints we leave behind when we walk

Ⓓ The total likelihood of getting zapped

Explanation: B is the correct answer. The second sentence in the third paragraph states that "net electric charge" is the correct term for static electricity.

Question 4

Which of the following statements is not true?

Ⓐ Friction is not necessary for static electricity to happen.

Ⓑ When the number of positive and negative electric charges is equal, static electricity will not happen.

Ⓒ Static electricity is painful because it is hot and burns the skin.

Ⓓ Static electricity is caused by friction.

Explanation: D is the correct answer. The second sentence in the second paragraph states that "However, friction is not required for static electricity to occur." This makes the information provided in answer A accurate. The third sentence in the third paragraph states that "Static electricity (more correctly called "net electric charge") occurs whenever the number of positive and negative electrical charges is not perfectly equal." This makes the information provided in answer B accurate. The seventh and eighth sentences in the fourth paragraph state that "The spark is painful because it is extremely hot. It creates tiny burned areas on our skin that hurt for a couple of seconds." This makes the information provided in answer C accurate. The fourth sentence in the second paragraph states that "It is true that friction can increase the likelihood of static electricity, but it is not the cause." This makes the information provided in answer D not true.

Question 5

The last paragraph of the passage deals primarily with:

Ⓐ Describing ways to prevent static electricity

Ⓑ Describing ways to prevent being zapped by static electricity

Ⓒ Describing ways to grab a metal door knob

Ⓓ Warning people against sitting in plastic car seat

Explanation: B is the correct answer. The last paragraph describes a way to deal with static electricity. It does not suggest how to prevent static electricity, but rather how to prevent it from hurting you.

Question 6

What is the main idea of the entire passage?

Ⓐ Educate people about static electricity

Ⓑ Prevent people from dragging their feet while walking on carpets

Ⓒ Tell a story of people who were hurt by static electricity

Ⓓ Warn people about static electricity

Explanation: A is the correct answer. The purpose of the passage is to give information about static electricity, how it happens, and how we can prevent ourselves from getting zapped.

Question 7

How common is "static electricity"?

Ⓐ It is very common.

Ⓑ It is quite rare.

Ⓒ It happens only in winter.

Ⓓ The paragraph does not provide sufficient information to answer this question.

Explanation: A is the correct answer. The fourth sentence in the first paragraph states that "Though static electricity is a common phenomenon...."

Question 8

What line from the passage best illustrates the fact that most people don't know what causes static electricity?

Ⓐ **Though static electricity is a common phenomenon its cause is often misunderstood.**

Ⓑ There is a simple way to avoid shocks caused by static electricity.

Ⓒ Every object is composed of a collection of positive and negative electric charges.

Ⓓ Static electricity is usually caused by friction of two objects against each other.

Explanation: A is the correct answer. In this line from the passage, it states that the cause of static electricity is "often misunderstood" implying that most people don't know what causes it.

Passage 2 (Questions 9-16)

Thomas Alva Edison

Thomas Alva Edison, an American inventor, was born in February 1847, as the seventh and last child of Samuel and Nancy Edison. Contrary to popular belief, Thomas Edison was not born into poverty in a backwater mid-western frontier town. Actually, he was born to middle-class parents in the lively port of Milan, Ohio, a community that next to Odessa, Russia, was the largest wheat shipping center in the world. In 1854, when little Edison was seven years old, his family moved to Port Huron, Michigan.

During childhood Edison learned eagerly by asking questions and reading numerous books. Unable to adapt himself to the routine of school, he quit three months after beginning when his teacher called him "addled." His mother, a former teacher, continued his education through home schooling. At the age of nine she gave him his first physics book. This book described scientific experiments that Edison could perform himself. Young Edison was hooked! The next year he set up a chemical laboratory in his family's basement.

By the age of 12, Edison had become a virtual adult. He had talked his parents into letting him go to work selling newspapers, snacks, and candy on the railroad. To avoid wasting time, he moved his basement laboratory to the baggage car and read in the public library during layovers in Detroit.

Edison filed papers with various inventions, from an electric vote recorder to a diplex and quadruplex telegraph. However, the invention for which he is best known is the commercial introduction of the incandescent lamp. He did not invent the lamp, but he did devise and manufacture the first lamp and electrical distribution system that could be operated economically together. This was by far much more significant than the invention of the lamp itself in promoting the general use of electricity.

Edison was awarded a special Congressional gold medal in 1928 for his many contributions to the nation's welfare. He died at 9 PM in October 1931. Recognizing that his death marked the end of an era in the progress of civilization, countless individuals, communities, and corporations throughout the world dimmed their lights, or briefly turned off their electric power in his honor on the day he was laid to rest.

Question 9

Which of the following sentences does not accurately describe Edison's background?

Ⓐ He was the youngest child in the family.

Ⓑ He was born to a poor family.

Ⓒ His mother was a school teacher.

Ⓓ His first job was selling goods on a train.

Explanation: B is the correct answer. The second sentence in the first paragraph states that "Contrary to popular belief, Thomas Edison was not born into poverty in a backwater mid-western frontier town."

Question 10

At what age did Edison start his laboratory experiments?

Ⓐ 7

Ⓑ 9

Ⓒ 10

Ⓓ 12

Explanation: C is the correct answer. In the second paragraph the author tells us that at the age of nine Edison was given his first physics book. The next year he set up his first chemical laboratory, which would make him 10 at the time he started his laboratory experiments.

Question 11

Which of the following inventions did Edison not invent?

Ⓐ Electric vote recorder

Ⓑ Diplex telegraph

Ⓒ Quadruplex telegraph

Ⓓ Incandescent lamp

Explanation: D is the correct answer. The third sentence in the fourth paragraph states that, "He (Edison) did not invent the lamp (incandescent lamp)..."

Question 12

Why is Edison's work on the incandescent lamp considered to be very significant?

Ⓐ He was the first man to invent a lamp.

Ⓑ It promoted the use of electricity.

Ⓒ He was awarded with a Congressional gold medal for it.

Ⓓ It made people acknowledge his importance as an inventor.

Explanation: B is the correct answer. The fourth sentence in the fourth paragraph states that, "This (devising and manufacturing of the first lamp) is by far much more significant than the invention of the lamp itself in promoting the general use of electricity." This implies that the significance of Edison's work on the incandescent lamp was promoting its role in the use of electricity.

Question 13

According to the first paragraph, what was Milan, Ohio famous for?

Ⓐ A wheat shipping center

Ⓑ The birth place of Edison

Ⓒ Being a mid-western frontier town

Ⓓ Being close to Port Huron, Michigan

Explanation: A is the correct answer. The third sentence in the first paragraph states, "...in the lively port of Milan, Ohio, a community that next to Odessa, Russia was the largest wheat shipping center in the world."

Question 14

What is the main idea of the entire passage?

Ⓐ To describe Edison as a child

Ⓑ Tell us that Edison was awarded a congressional gold medal

Ⓒ Inform us about Thomas Edison's life

Ⓓ Describe Edison's inventions

Explanation: C is the correct answer. The main idea of the passage is to summarize and give us information about Thomas Edison's life. Though answers A, B, and D are correct, they each describe only a portion of the information provided in the passage.

Question 15

What does it mean in the third paragraph when it says that Edison became "a virtual adult?"

Ⓐ Edison looked like an adult.

Ⓑ Edison dressed like an adult.

Ⓒ Edison worked like an adult.

Ⓓ Edison liked to watch adults.

Explanation: C is the correct answer. The phrase "virtual adult" is mentioned in the context of describing Edison's first job, selling goods on a train. Thus, the phrase "virtual adult" applies to Edison having a job.

Question 16

Where did Edison get most of his education?

Ⓐ **From books and studying at home**

Ⓑ School

Ⓒ Selling newspaper at the train station

Ⓓ His brothers

Explanation: A is the correct answer. Reading the second paragraph, we learn two things about Edison's education. First, he learned by "...asking questions and reading numerous books." Second, he quit school three months after beginning, and "His mother, a former teacher, continued his education through home schooling" as stated in paragraph 2.

Passage 3 (Questions 17-24)

Natural Gas

Natural gas is a vital component of the world's supply of energy. It is known to be one of the safest, most environmentally friendly, and useful energy sources known to man. Despite its importance there are many misconceptions associated with natural gas. Many of these misconceptions are due to the variety of uses of the word “gas.” For example, we use gas to fuel our cars and motorcycles, and we barbecue on gas grills. These “gases,” however, are not natural gas. They are other substances of gas such as fossil and propane.

Natural gas is nothing new. In fact, most of the natural gas that is found today in reservoirs underneath the earth was manufactured millions and millions of years ago. There are many different theories as to its origin. The most widely accepted theory suggests that natural gas is formed when organic matter (such as the remains of plants and animals) is compressed under the earth's surface at a very high pressure for a very long time. Natural gas can also be formed when specific micro-organisms chemically break down organic matter. A third way in which natural gas can be produced is called the abiogenic process. This formation of natural gas is the result of an underground interaction between organic matter, gases, and minerals in a high-pressure environment.

Due to its methods of production, natural gas is usually found underneath the surface of the earth. Once it is formed it will rise toward the surface of the earth through loose, shale-type rock and other materials. Some of the gas will simply rise to the surface and dissipate into air. A great deal of this gas, however, will be “trapped” under the ground and accumulate there. This happens when a rock named “impermeable sedimentary” forms a “dome” shape like an umbrella that catches all the natural gas that is floating to the surface. With natural gas trapped under the earth in this fashion, it can be recovered by drilling a hole through the rock. The gas that is under great pressure then flows to the surface where it is collected.

Most of the natural gas reserves are located in the Middle East (34% of the world's total) and Europe and the former USSR (42% of the world's total reserves). The United States possesses 3% of the world's total natural gas reserves. Most of the gas found in the United States is concentrated in relatively distinct geographical areas; primarily around Texas and the Gulf of Mexico.

Question 17

Where are most of the natural gas reservoirs in the world located?

Ⓐ Russia

Ⓑ Middle East

Ⓒ Europe and former USSR

Ⓓ Texas and the Gulf of Mexico

Explanation: C is the correct answer. The first sentence of the fourth paragraph states that most (42%) of the world's total reserves are located in Europe and the former USSR. The Middle East has a substantial amount of gas as well (34%); however, this is less than the amounts found in Europe and the former USSR.

Question 18

In the passage it is mentioned that, in order to recover gas, a hole in the ground is drilled. After the hole is drilled, what is usually used in order to bring the gas to the surface?

Ⓐ A special gas pump

Ⓑ The force of the gas's own pressure

Ⓒ Dome-shaped rocks named “impermeable sedimentary”

Ⓓ Generators

Explanation: B is the correct answer. The last sentence of the third paragraph states that "The gas that is under great pressure then flows to the surface, where it is collected."

Question 19

Which of the following *could* be a common use of natural gas?

Ⓐ Cooking

Ⓑ Barbequing

Ⓒ Car fueling

Ⓓ Motorcycle fueling

Explanation: A is the correct answer. In the first paragraph the author mentions that there are many misconceptions associated with natural gas. Among the examples given are using gas for car fueling, motorcycle fueling, and gas barbecuing. Knowing that these three are not common uses of natural gas enables us to eliminate options B, C, and D and leave us option A as a possible use for natural gas.

Question 20

According to the most widely accepted theory dealing with the origin of gas, how is natural gas created?

Ⓐ Underground high-pressured interaction between minerals and gases

Ⓑ A process of highly pressured compressing of organic matter over a long period of time

Ⓒ Microorganisms chemically break down organic matter

Ⓓ A chemical interaction between underground remains of plants and animals

Explanation: B is the correct answer. The fourth sentence in the second paragraph states that "The most widely accepted theory suggests that natural gas is formed when organic matter (such as the remains of plants and animals) is compressed under the earth's surface at a very high pressure for a very long time."

Question 21

Which of the following is not true about natural gas?

Ⓐ It is a very important source of energy.

Ⓑ There are a lot of false beliefs associated with natural gas.

Ⓒ Natural gas is most likely found under the earth's surface.

Ⓓ Natural gas is hard to find.

Explanation: D is the correct answer. There is evidence in the passage to support answers A, B, and C. There is no support, however, for answer D, making it the incorrect piece of information. The first sentence in the first paragraph states that "Natural gas is a vital component of the world's supply of energy." This makes answer A true. The third sentence in the first paragraph states that "Despite its importance, there are many misconceptions associated with natural gas." This makes answer B true. The second sentence in the second paragraph states that "In fact, most of the natural gas that is found today in reservoirs underneath the earth...." This makes answer C true.

Question 22

Of the following, which is the best title for this passage?

Ⓐ Where can we find natural gas

Ⓑ Natural gas - common misconceptions

Ⓒ Natural gas - how it is formed and where it is found

Ⓓ Natural gas - past, present, and future

Explanation: C is the correct answer. Answer D is incorrect and can be eliminated. The passage does not talk about the past, neither does it try to predict the future of natural gas. The information given in answers A and B is correct; however, it is only a portion of the information provided in the passage. The main idea of the paragraph is to describe the ways natural gas is formed and where it is found, and thus "Natural gas- how it is formed and where it is found" serves as the best title for the passage.

Question 23

The formation of natural gas would not be possible without:

Ⓐ Organic matter

Ⓑ Dome-shaped rocks

Ⓒ Fossil and propane

Ⓓ Reservoirs

Explanation: A is the correct answer. In the second paragraph, three theories of natural gas formation are described. The thing that is common to all three theories is the need for organic matter to produce natural gas.

Question 24

What does it mean in the first paragraph when it says that natural gas is "environmentally friendly?"

Ⓐ **It does not pollute.**

Ⓑ It is sufficient.

Ⓒ It is environmental.

Ⓓ It is easy to find.

Explanation: A is the correct answer. The phrase "environmentally friendly" in the context in which it is being used describes a substance (such as natural gas) that does not pollute.

CAST-R Practice Tests Answer Sheet

This answer response sheet is provided for your convenience as you work through the CAST-R practice tests. Mark or fill in the circle indicating your answer to each question and use this sheet to compare your answers to the those provided in the Answers and Explanations section for each test.

Graphic Arithmetic

1 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	**3** Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	**5** Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	**7** Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
2 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	**4** Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	**6** Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ	**8** Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Mechanical Concepts

1 Ⓐ Ⓑ Ⓒ	**8** Ⓐ Ⓑ Ⓒ	**15** Ⓐ Ⓑ Ⓒ	**22** Ⓐ Ⓑ Ⓒ
2 Ⓐ Ⓑ Ⓒ	**9** Ⓐ Ⓑ Ⓒ	**16** Ⓐ Ⓑ Ⓒ	**23** Ⓐ Ⓑ Ⓒ
3 Ⓐ Ⓑ Ⓒ	**10** Ⓐ Ⓑ Ⓒ	**17** Ⓐ Ⓑ Ⓒ	**24** Ⓐ Ⓑ Ⓒ
4 Ⓐ Ⓑ Ⓒ	**11** Ⓐ Ⓑ Ⓒ	**18** Ⓐ Ⓑ Ⓒ	**25** Ⓐ Ⓑ Ⓒ
5 Ⓐ Ⓑ Ⓒ	**12** Ⓐ Ⓑ Ⓒ	**19** Ⓐ Ⓑ Ⓒ	**26** Ⓐ Ⓑ Ⓒ
6 Ⓐ Ⓑ Ⓒ	**13** Ⓐ Ⓑ Ⓒ	**20** Ⓐ Ⓑ Ⓒ	
7 Ⓐ Ⓑ Ⓒ	**14** Ⓐ Ⓑ Ⓒ	**21** Ⓐ Ⓑ Ⓒ	

Reading for Comprehension

1 Ⓐ Ⓑ Ⓒ Ⓓ	**7** Ⓐ Ⓑ Ⓒ Ⓓ	**13** Ⓐ Ⓑ Ⓒ Ⓓ	**19** Ⓐ Ⓑ Ⓒ Ⓓ
2 Ⓐ Ⓑ Ⓒ Ⓓ	**8** Ⓐ Ⓑ Ⓒ Ⓓ	**14** Ⓐ Ⓑ Ⓒ Ⓓ	**20** Ⓐ Ⓑ Ⓒ Ⓓ
3 Ⓐ Ⓑ Ⓒ Ⓓ	**9** Ⓐ Ⓑ Ⓒ Ⓓ	**15** Ⓐ Ⓑ Ⓒ Ⓓ	**21** Ⓐ Ⓑ Ⓒ Ⓓ
4 Ⓐ Ⓑ Ⓒ Ⓓ	**10** Ⓐ Ⓑ Ⓒ Ⓓ	**16** Ⓐ Ⓑ Ⓒ Ⓓ	**22** Ⓐ Ⓑ Ⓒ Ⓓ
5 Ⓐ Ⓑ Ⓒ Ⓓ	**11** Ⓐ Ⓑ Ⓒ Ⓓ	**17** Ⓐ Ⓑ Ⓒ Ⓓ	**23** Ⓐ Ⓑ Ⓒ Ⓓ
6 Ⓐ Ⓑ Ⓒ Ⓓ	**12** Ⓐ Ⓑ Ⓒ Ⓓ	**18** Ⓐ Ⓑ Ⓒ Ⓓ	**24** Ⓐ Ⓑ Ⓒ Ⓓ