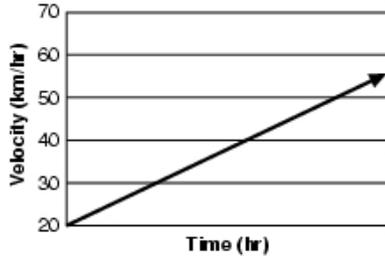


Name: _____

Date: _____

1. This graph shows the velocity of a car.



Which statement BEST explains how the car is moving?

- A. Velocity is increasing, so the car is accelerating.
- B. Velocity is decreasing, so the car is accelerating.
- C. Velocity is increasing, so the car is not accelerating.
- D. Velocity is decreasing, so the car is not accelerating.

2. Sam was learning how to roller-skate. He did not want to go fast. On which kind of floor surface would Sam travel the slowest?

- A. carpet
- B. concrete
- C. tile
- D. wood

3. All objects in the universe are attracted to each other by the force of

- A. effort.
- B. friction.
- C. gravity.
- D. inertia.

4. Use the information below to answer this question.

Suzan places a marble and a ball of modeling clay on the surface of water in a jar. Both objects sink.

Suzan removes them from the water. Then she molds the clay ball into a bowl shape and again places the two objects on the surface of the water.

What happens next?

- A. The marble and the clay bowl both sink.
- B. The marble and the clay bowl both float.
- C. The marble floats and the clay bowl sinks.
- D. The marble sinks and the clay bowl floats.

5. Why do some competitive swimmers shave their heads and bodies?

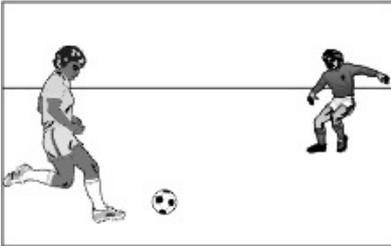
- A. to decrease weight
 - B. to decrease friction
 - C. to increase buoyancy
 - D. to increase blood flow
-

6. Oliver the dog doesn't want to walk in the rain. He can make his owner pull harder on the leash to get him out the door by

- A. sitting on the vinyl floor.
 - B. sitting on the tile floor.
 - C. sitting on the carpeted floor.
 - D. sitting on the wood floor.
-

7.

Use the illustration below to answer this question.



Katie sent a soccer ball toward Andy on a flat field. The ball started moving because of which force?

- A. her kick
 - B. gravity
 - C. friction
 - D. air inside the ball
-

8. Which is true about the relationship between an object's mass and its weight?

- A. The object's mass is caused by the weight of the object pushing downward.
 - B. Weight is gravity's force on the object, which is determined by its mass.
 - C. An object's weight and its mass are the same, but they are measured differently.
 - D. An object's weight and its mass are independent of each other.
-

9. Jeff was riding in a car. Which change demonstrates the GREATEST effect of inertia?

- A. The car makes a sudden stop.
 - B. The car slows down gradually.
 - C. The car changes into another lane.
 - D. The car runs out of gas and rolls to a stop.
-

L-8-5 (L-8-5)

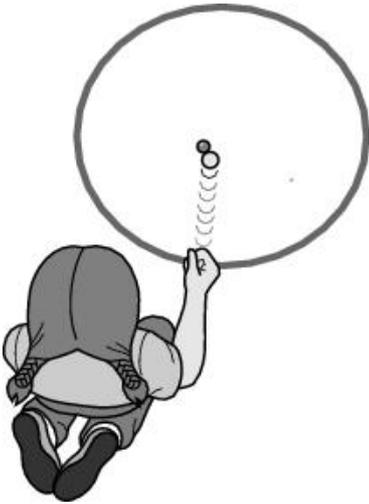
10. Manuel is coasting on his bike. Because he is not pedaling, his bike will come to a stop. Which of these will cause Manuel's bike to stop?

- A. an increase in kinetic energy
 - B. Earth's magnetic field
 - C. the property of inertia
 - D. the force of friction
-

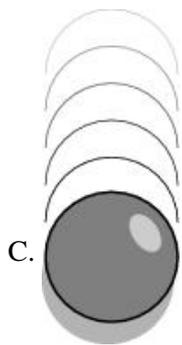
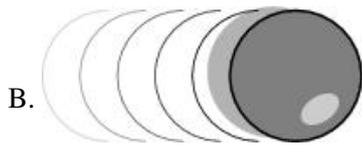
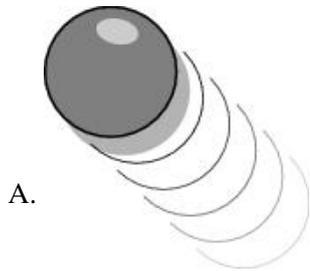
11. Simon rolled a ball down a hill. The ball stopped before it reached the bottom of the hill. Which of these MOST LIKELY stopped the ball from rolling?

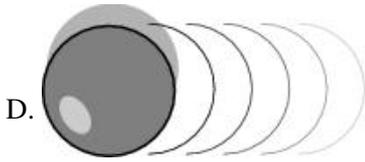
- A. mass
 - B. gravity
 - C. friction
 - D. inertia
-

12. Susan plays a game of marbles with John. She tries to knock John's marble out of the circle. She rolls her marble and it hits John's marble.



How would John's marble move after being hit?

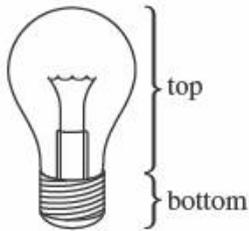




13. Shaina uses a shovel to dig a hole to plant a tree. A shovel is an example of a compound machine because it is made up of what two simple machines?

- A. wheel and axle and lever
 - B. lever and wedge
 - C. screw and wedge
 - D. inclined plane and wedge
-

14. The picture below shows a light bulb.



The bottom of this light bulb is an example of what type of simple machine?

- A. a lever
- B. a pulley
- C. a screw
- D. a wedge

This online assessment item contains material that has been released to the public by the Massachusetts Department of Education.

15.

When doing work using simple machines, what happens when the effort distance is increased?

- A. The effort force is decreased.
 - B. The effort force is increased.
 - C. The resistance force is increased.
 - D. The direction of the effort force is changed.
-

16.

Your mother asks you to move a large rock from of her garden. The rock is too heavy to lift. Because you are an excellent science student, you understand how simple machines make work easier. You use a long pole balanced on a brick to lift the rock and start it rolling. You push down on one end of the pole and the rock moves up. This simple machine is an example of a(n)

- A. fixed pulley.
 - B. inclined plane.
 - C. first class lever.
 - D. second class lever.
-

17.

When you turn a screw with a screwdriver, you are actually using two simple machines: a screw and the screwdriver is an example of a(n)

- A. lever.
- B. wedge.
- C. inclined plane.
- D. wheel and axle.

Answer Key

1. A) Velocity is increasing, so the car is accelerating.
2. A) carpet
3. C) gravity.
4. D) The marble sinks and the clay bowl floats.
5. B) to decrease friction
6. C) sitting on the carpeted floor.
7. A) her kick
8. B) Weight is gravity's force on the object, which is determined by its mass.
9. A) The car makes a sudden stop.
10. D) the force of friction
11. C) friction



12. A)
13. B) lever and wedge
14. C) a screw
15. A) The effort force is decreased.
16. C) first class lever.
17. D) wheel and axle.