1 **A student tests the friction on different surfaces by rolling a toy car on each surface. Which surface will have the *least* friction, and how will it impact the motion of the toy car?**

A Carpet; the toy car will move the least distance.

B Concrete; the toy car will move the least distance.

C Grass; the toy car will move the farthest distance.

D Ice; the toy car will move the farthest distance.

2 **Sam rolls four balls of different masses along the pavement. If each ball travels with the same speed, which ball would require the *least* force to be stopped?**

A the ball with mass 0.5 kg

B the ball with mass 1.5 kg

C the ball with mass 2.5 kg

D the ball with mass 3.5 kg

3 **A soccer ball is kicked on a grassy field. The ball slows down as it rolls on the field.**

What causes the ball to slow down?

A The magnetic attraction of the grass on the ball causes the ball to slow down.

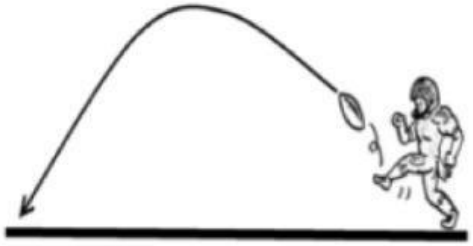
B The gravity of the grass on the ball causes the ball to slow down.

C The mass of the grass on the ball causes the ball to slow down.

D The friction of the grass on the ball causes the ball to slow down.

LIVEWORKSHEETS

4 **The football player kicks a ball that goes high in the air and then falls toward the ground.**



What makes it possible for the football to fall back to the ground?

A friction

B gravity

C magnetism

D volume

5 **A student rolls four bowling balls with different masses on a surface with the same force. The table shows the mass of each ball.**

Ball	Mass (kg)
red	3
green	13
purple	9
yellow	8

Which ball moves the *greatest* distance in five seconds?

A green

B purple

C red

D yellow

LIVEWORKSHEETS

6 **Four balls with different masses are rolled toward a student with the same velocity. On which ball would the student apply the *greatest* force to stop it?**

A 150 g ball

B 170 g ball

C 350 g ball

D 450 g ball

7 **A worker at a construction site pulls a cart filled with concrete blocks weighing 50 kg each. He finds that the cart moves slowly.**

Which action would make the cart move *fastest* when pulled with the same force?

A add 1 concrete block

B add 10 concrete blocks

C remove 1 concrete block

D remove 10 concrete blocks

8 **Tanesha applies identical forces to four blocks of wood of different masses. Which block of wood will move the *fastest*?**

A a block of mass 7 kg

B a block of mass 5 kg

C a block of mass 4 kg

D a block of mass 2 kg

LIVEWORKSHEETS

9 **Austin pushes four boxes with different masses across his driveway with the same amount of force. The table shows the masses of the boxes.**

Box	Mass (kilograms)
1	12
2	16
3	22
4	27

Which box moves *slowest*?

A Box 1

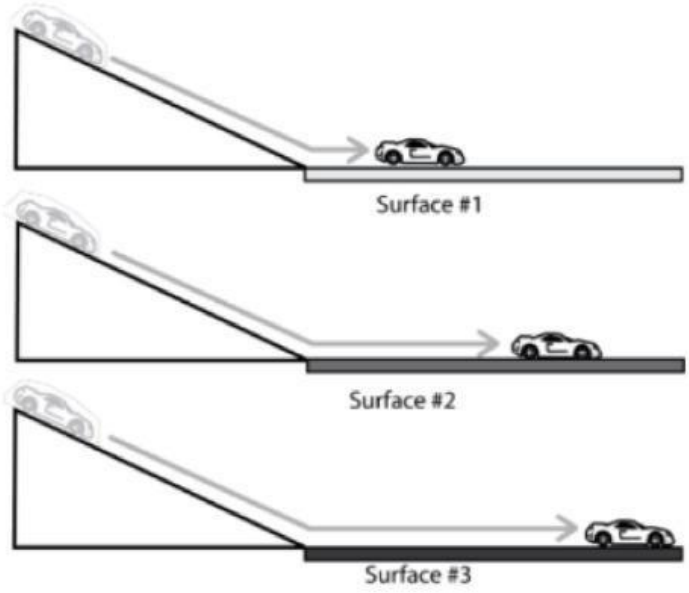
B Box 2

C Box 3

D Box 4

10

The same toy car was rolled down the same ramp onto three different surfaces. The distance the car traveled on each surface is seen in the illustration.



Compared to the other surfaces, Surface #1–

A is not as affected by the force of gravity.

B has the weakest force opposing motion.

C has the greatest amount of friction.

D is less dense and has less mass.

LIVEWORKSHEETS

11 **Carter dropped a pebble from his balcony. The table shows the speed with which the pebble freely falls in relation to time.**

Time (sec)	Speed (m/s)
0	0
2	20
4	40
6	60

What should be the speed of the pebble after 9 seconds?

- ○ 60 m/s
- ○ 70 m/s
- ○ 80 m/s
- ○ 90 m/s

12 Jacob walked 30 minutes from his house to his grandmother's house. After leaving his grandmother's house, it took Jacob only 20 minutes to walk home.

What can be *best* concluded about Jacob's walk home?

- ○ He walked uphill going home.
- ○ He walked at a constant speed in both directions.
- ○ He walked downhill going home.
- ○ He walked at a faster pace going home.

13. Jake's dad drove from Raleigh to Greensboro in 1 hour and 30 minutes.



What additional information does Jake need to find his dad's driving speed? (5.P.1.2)

A. Jake needs to know the force of gravity acting on his dad's car.
B. Jake needs to know the mass (weight) of his dad's car.
C. Jake needs to know about the friction between the tires and the road.
D. Jake needs to know the distance from Raleigh to Greensboro.

LIVEWORKSHEETS

14. A biologist observes a bat in motion. The bat flies a distance of 2 miles. If the biologist wants to determine the bat's speed, what other information does she need? (5.P.1.2)



A. She needs to know the amount of time the bat flies.
B. She needs to know the direction the bat flies.
C. She needs to know the bat's starting position.
D. She needs to know the bat's mass while it is flying.

15 What is the speed of a car that travels 50 miles in 2 hours?

A	25 miles per hour
B	48 miles per hour
C	52 miles per hour
D	100 miles per hour

LIVEWORKSHEETS

16 The graph shows the motion of an object.



Which part of the graph shows when the object is stationary?

A between 2 and 4 seconds

B between 4 and 6 seconds

C between 0 and 2 seconds

D between 6 and 10 seconds

17 **This is a graph showing distance versus time of an object.**

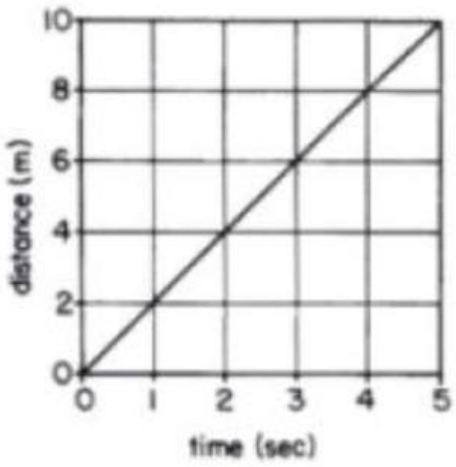
How far did the object travel in 4 seconds?

A 10 meters

B 8 meters

C 6 meters

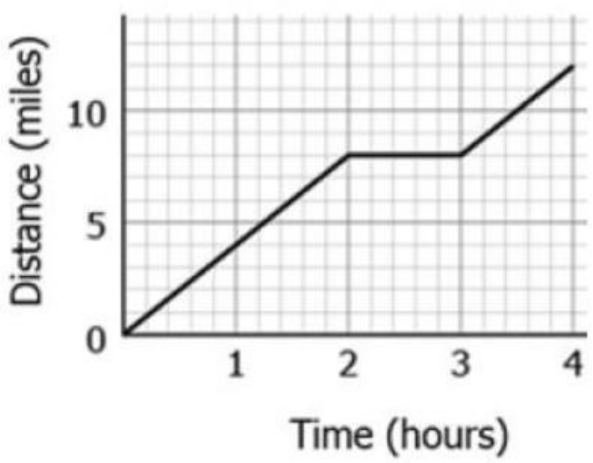
D 4 meters



LIVEWORKSHEETS

18

An athlete runs 12 miles, as shown. **During which time interval is the athlete at rest?**



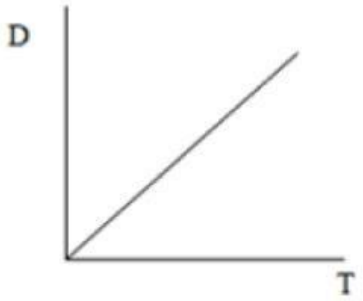
A 0 to 1 hours

B 1 to 2 hours

C 2 to 3 hours

D 3 to 4 hours

19 **Examine the distance-time graph for an object.**



What can be inferred about the motion of the object?

A The object is traveling faster as the time increases.

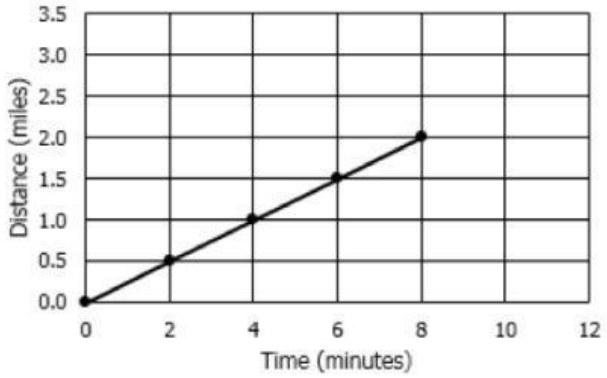
B The object is traveling at a constant speed as the time increases.

C The object is traveling slower as the time decreases.

D The object is traveling faster as the time decreases.

LIVEWORKSHEETS

20 **The graph shows distance and time data for a cyclist.**



If the cyclist continues traveling at the same rate, how long will it take the cyclist to travel 3.0 miles?

A 9 minutes

B 10 minutes

C 11 minutes

D 12 minutes

LIVEWORKSHEETS