## **Laws of Motion**



Class Date Name

A force, F, is applied to the handle of a lawnmower inclined at angle q to the ground. The magnitude of the horizontal component of force F depends on

Circle the answer letter.

- a. the magnitude of force F, only.
- b. the measure of angle q, only.
- c. both the magnitude of force F and the measure of angle q.
- The graph below represents the motion of an object. According to the graph, as time increases, the velocity of the object

A roller coaster, traveling with an initial speed of 15 meters per second, decelerates uniformly at -7.0 meters per second<sup>2</sup> to a full stop. Approximately how far does the roller coaster travel during its deceleration?

16 m

A ball dropped from rest falls freely until it hits the ground with a speed of 20 meters per second. The time during which the ball is in free fall is approximately .





**PREVIEW** 

Please Sign In or Sign Up to download the printable version of this worksheet

Which terms both represent scalar quantities?



- a. displacement and velocity
- b. distance and speed
- c. displacement and speed
- A 70 kg astronaut has a weight of 560 newtons on the surface of planet Alpha. What is the acceleration due to gravity on planet Alpha? m/s<sup>2</sup>

8.6 m/s 12 m/s

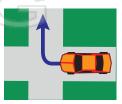
15 m/s 9.8 m/s

If the direction of a moving car changes and its speed remains constant, which quantity must remain the same?

a. velocity

b. momentum

c. kinetic energy



er inutes, the third km in 6.0 f the runner

16 km/min

elocity ove ical

## **Laws of Motion - Answer Key**



Class Date Name A force, F, is applied to the handle of a A roller coaster, traveling with an initial speed of 15 meters per second, lawnmower inclined at angle q to the decelerates uniformly at -7.0 meters per ground. The magnitude of the horizontal second<sup>2</sup> to a full stop. Approximately component of force F depends on how far does the roller coaster travel Circle the answer letter. during its deceleration? a. the magnitude of force F, only. 16 m b. the measure of angle q, only. c.) both the magnitude of force F and the A ball dropped from rest falls freely measure of angle q. until it hits the ground with a speed of 20 meters per second. The time The graph below represents the motion of during which the ball is in free fall is an object. According to the graph, as time approximately increases, the velocity of the object er inutes, the third km in 6.0 f the runner 16 km/min **PREVIEW** elocity Please Sign In or Sign Up to download ove ical the printable version of this worksheet 8.6 m/s 12 m/s Which terms both represent scalar quantities? 15 m/s 9.8 m/s a. displacement and velocity b.) distance and speed If the direction of a moving car changes and its speed remains constant, which c. displacement and speed quantity must remain the same? A 70 kg astronaut has a weight of 560 a. velocity newtons on the surface of planet Alpha. b. momentum What is the acceleration due to gravity on kinetic energy planet Alpha? 8.0

m/s<sup>2</sup>