

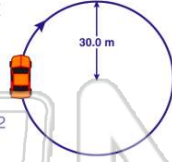


Name _____ Class _____ Date _____

- 1 A 2.0×10^3 -kilogram car travels at a constant speed of **12 meters per second** around a circular curve of **radius 30 meters**.

What is the **magnitude** of the **centripetal acceleration** of the car as it goes around the curve?

- A 0.40 m/s² C 800 m/s²
B 4.8 m/s² D 9,600 m/s²



- 3 A car initially traveling at a speed of 16 meters per second **accelerates uniformly** to a speed of 20 meters per second over a distance of 36 meters. What is the **magnitude** of the car's **acceleration**?

- A 0.11 m/s²
B 2.0 m/s²

- 4 Which person has the **greatest inertia**?
- A a 110-kg wrestler resting on a mat
B a 90-kg man walking at 2 m/s
C a 70-kg long-distance runner traveling at 5 m/s
D a 50-kg girl sprinting at 10 m/s

5

A group of diverse children are standing on a green patch of grass. Above them are four thought bubbles containing various science-related icons: a cube, a microscope, a globe, a pie chart, a bar graph, and mathematical symbols like a plus sign, minus sign, multiplication sign, and equals sign. The word 'PREVIEW' is written in large, bold letters below the children.

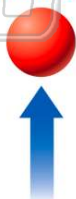
PREVIEW

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

- 7
- A average velocity
B total displacement
C change in momentum
D average speed

- 9 A ball thrown vertically upward reaches a maximum height of **30 meters** above the surface of Earth. At its **maximum height**, the **speed** of the ball is

- A 0.0 m/s
B 3.1 m/s
C 9.8 m/s
D 24 m/s



- 10 What is the **speed** of a 1.0×10^3 -kilogram car that has a **momentum** of 2.0×10^4 kilogram•meters per second east?
- A 5.0×10^{-2} m/s
B 2.0×10^1 m/s
C 1.0×10^4 m/s
D 2.0×10^7 m/s



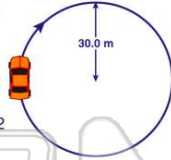


ANSWER KEY

A 2.0×10^3 -kilogram car travels at a constant speed of **12 meters per second** around a circular curve of **radius 30 meters**.

What is the **magnitude** of the **centripetal acceleration** of the car as it goes around the curve?

- A 0.40 m/s²
- B 4.8 m/s²
- C 800 m/s²
- D 9,600 m/s²



(b)

A 2.0×10^3 -kilogram car travels at a constant speed of **12 meters per second** around a circular curve of **radius 30 meters**.

As the car goes around the curve, the **centripetal force is directed**

- A toward the center of the circular curve
- B away from the center of the circular curve
- C tangent to the curve in the direction of motion
- D tangent to the curve opposite the direction of motion

(a)

A car initially traveling at a speed of 16 meters per second **accelerates uniformly** to a speed of 20 meters per second over a distance of 36 meters. **What is the magnitude of the car's acceleration?**

- A 0.11 m/s²
- B 2.0 m/s²
- C 0.22 m/s²
- D

(b)

Which person has the **greatest inertia?**

- A a 110-kg wrestler resting on a mat
- B a 90-kg man walking at 2 m/s
- C a 70-kg long-distance runner traveling at 5 m/s
- D a 50-kg girl sprinting at 10 m/s

(a)



PREVIEW

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

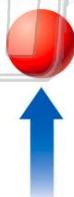
- A average velocity
- B total displacement
- C change in momentum
- D average speed

- A 1.6 m/s
- B 2.2 m/s²
- C 2.4 m/s²
- D 3.8 m/s²



A ball thrown vertically upward reaches a maximum height of **30 meters** above the surface of Earth. **At its maximum height, the speed of the ball is**

- A 0.0 m/s
- B 3.1 m/s
- C 9.8 m/s
- D 24 m/s



(a)

What is the **speed** of a 1.0×10^3 -kilogram car that has a **momentum** of 2.0×10^4 kilogram-meters per second east?

- A 5.0×10^{-2} m/s
- B 2.0×10^1 m/s
- C 1.0×10^4 m/s
- D 2.0×10^7 m/s



(b)