





Name _____ Class _____ Date _____

- 1 As the **angle** between two concurrent forces **decreases**, the magnitude of the force required to produce **equilibrium**
- A decreases
 - B increases
 - C remains the same

- 3 A **0.50-kilogram** object moves in a horizontal circular path with a **radius of 0.25 meter** at a constant speed of **4.0 meters per second**. What is the **magnitude of the object's acceleration**?
- 
- A 8.0 m/s²
 - B 16 m/s²
 - C 0.50 m/s²
 - D 0.25 m/s²

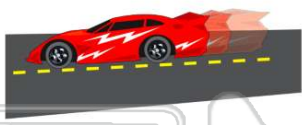
- 2 A child walks **5.0 meters north**, then **4.0 meters east**, and finally **2.0 meters south**. What is the magnitude of the **resultant displacement** of the child after the entire walk?
- 
- A 1.0 m
 - B 5.0 m
 - C 3.0 m
 - D 11.0 m

- 4 Which situation will produce the **greatest change of momentum** for a 1.0-kilogram cart?
- A accelerating it from rest to 3.0 m/s
 - B accelerating it from 2.0 m/s to 4.0 m/s
 - C applying a net force of 5.0 N for 2.0 s




PREVIEW

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- 7
- A 1960 m/s
 - B 62.6 m/s
 - C 44.3 m/s
 - D 31.3 m/s
- 

- A 0.50 m/s
 - B 7.4 m/s
 - C 9.8 m/s
 - D 15 m/s
- 

- 9 A soccer player kicks a ball with an initial velocity of **10 meters per second** at an angle of **30°** above the horizontal. The **magnitude of the horizontal component of the ball's initial velocity** is
- 
- A 5.0 m/s
 - B 8.7 m/s
 - C 9.8 m/s
 - D 10. m/s

- 10 A **1.0-kilogram** laboratory cart moving with a velocity of **0.50 meter per second due east** collides with and sticks to a similar cart initially at rest. After the collision, the two carts move off **together** with a velocity of **0.25 meter per second due east**. The **total momentum** of this frictionless system is
- A zero before the collision
 - B zero after the collision
 - C the same before and after the collision
 - D greater before the collision than after the collision



ANSWER KEY

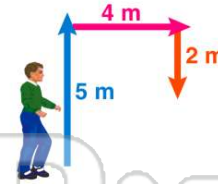
As the **angle** between two concurrent forces **decreases**, the magnitude of the force required to produce **equilibrium**

- A** decreases
- B** increases
- C** remains the same

(b)

A child walks **5.0 meters north**, then **4.0 meters east**, and finally **2.0 meters south**. What is the magnitude of the **resultant displacement** of the child after the entire walk?

- A** 1.0 m
- B** 5.0 m
- C** 3.0 m
- D** 11.0 m



(c)

A **0.50-kilogram** object moves in a horizontal circular path with a **radius of 0.25 meter** at a constant speed of **4.0 meters per second**. What is the **magnitude of the object's acceleration**?

- A** 8.0 m/s²
- B** 16 m/s²
- C** 32 m/s²
- D** 64 m/s²



(b)

Which situation will produce the **greatest change of momentum** for a **1.0-kilogram** cart?

- A** accelerating it from rest to 3.0 m/s
- B** accelerating it from 2.0 m/s to 4.0 m/s
- C** applying a net force of 5.0 N for 2.0 s
- D** applying a net force of 10.0 N for 0.5 s

(c)



PREVIEW

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- B** 62.6 m/s
- C** 44.3 m/s
- D** 31.3 m/s



- A** 0.30 m/s
- B** 7.4 m/s
- C** 9.8 m/s
- D** 15 m/s



A soccer player kicks a ball with an initial velocity of **10 meters per second** at an angle of **30°** above the horizontal. The **magnitude of the horizontal component of the ball's initial velocity** is

- A** 5.0 m/s
- B** 8.7 m/s
- C** 9.8 m/s
- D** 10. m/s



(b)

A **1.0-kilogram** laboratory cart moving with a velocity of **0.50 meter per second due east** collides with and sticks to a similar cart initially at rest. After the collision, the two carts move off **together** with a velocity of **0.25 meter per second due east**. The **total momentum** of this frictionless system is

- A** zero before the collision
- B** zero after the collision
- C** the same before and after the collision
- D** greater before the collision than after the collision

(c)