

## Quiz: Projectile Motion

1. In projectile motion, the x-axis and the y-axis are \_\_\_\_\_.

- A. dependent
- B. independent

2. Which of the following examples does *not* show projectile motion?

- A. a tennis ball bounces across the net
- B. a ball is thrown at a downward angle toward a target on the ground
- C. a feather drifts to the ground
- D. a horseshoe is pitched at a stake

3. Which of the following examples shows parabolic motion?

- A. the ball in an extra point kick
- B. an apple falling from a tree branch
- C. a spacecraft orbiting a planet
- D. a model rocket fired vertically into still air

4. Assuming a projectile travels at a constant velocity and does not hit another object, the horizontal distance traveled in a given amount of time is (Hint: What is  $\Delta X$ ?)

- A. equal to its velocity multiplied by the time of travel.
- B. dependent on the angle at which it was launched.
- C. reduced by the force of gravity, and the reduction is proportional to the time of travel.
- D. constant.

5. A helicopter is flying at an altitude of 195 m when the passenger throws a suitcase out of the door with a horizontal velocity of 2.75 m/s. How much time passes before the suitcase hits the ground?

- A. 6.31 s
- B. 4.46 s
- C. 19.9 s
- D. 70.9 s

6. A tennis ball rolls off the edge of the roof of a building and falls 122 m to the ground. If the ball hits the ground 12.5 m from the point where it left the roof, how fast was it going when it fell off the edge?

- A. 0.502 m/s
- B. 2.51 m/s
- C. 3.54 m/s
- D. 76.3 m/s

7. An arrow is shot at an angle of  $18.0^\circ$  toward a vertical wall that is 33.0 m away. The arrow leaves the bow 1.25 m above the ground at a speed of 46.0 m/s. The arrow will strike the wall \_\_\_\_\_ m above the ground at the wall.

- A. 9.15
- B. 7.90
- C. 10.7
- D. 3.29