**Practice Quiz**

1. In order to find the components of a vector, you should …

a. draw a rectangle so that the vector is the diagonal

b. measure the sides of the rectangle

c. draw the vector with correct magnitude and orientation

d. all of the above

2. The horizontal component of a projectile’s velocity is independent of …

a. time b. the vertical component of its velocity c. the range of the projectile

3. In the absence of air friction, the horizontal component of a projectile’s velocity doesn’t change as the projectile moves.

a. always true b. always false c. sometimes true

4. A ball is thrown into the air at some angle. At the very top of the ball’s path, its velocity is

a. there’s not enough information c. entirely horizontal

b. both vertical and horizontal d. entirely vertical

5. A ball thrown in the air will never go as far as physics ideally would predict because…

a. ideally the ball would never land c. gravity is acting

b. air friction slows the ball d. one can never throw the ball fast enough

e. all of the above

6. At what part of a path does a projectile have minimum speed?

a. at the top of its path c. when it is thrown

b. there’s not enough information to say d. when it returns to the ground

e. halfway to the top

7. A projectile launched horizontally hits the ground in 0.5 seconds. If it had been launched with a much higher speed in the same direction, it would have hit the ground (neglecting the earth’s curvature and air resistance) in…

a. more than 0.5 s b. 0.5 s c. less than 0.5 s

8. An object is dropped and falls freely to the ground with an acceleration of 1 g. If it is thrown upward at an angle instead, its acceleration would be …

a. 0 g b. larger than 1 g c. 1 g downward d. 1 g upward e. none

9. A cannonball is launched horizontally from a tower. If the cannon has a barrel velocity of 100 m/s, how far downrange will the cannonball be 1 second later? (Neglect air resistance.)

a. 50 m b. 98 m c. 490 m d. 100 m e. none of the above

10. An airplane flying into a head wind loses ground speed, and an airplane flying with the wind gains ground speed. If an airplane flies at right angles to the wind, then ground speed is… a. more b. unchanged c. less

KEY

1. d

2. b

3. a

4. c

5. b

6. a

7. b

8. c

9. d

10. a