

Chapter 3 Worksheet

1. What is the difference between a vector and a scalar quantity? Give an example of each.
2. a) What is used to represent a vector?

b) Why is the length and direction of the arrow important?
3. If a vector that is 1 cm long represents a velocity of 10 m/s, what velocity does a vector 3 cm long represent?
4. Suppose that an airplane is normally flying at 80 km/hr encounters wind at a right angle to its forward motion---a crosswind. Will the airplane fly faster or slower than 80 km/hr?
5. What is a projectile? Give two examples.
6. What causes a ball dropped through the air to accelerate?
7. Why do all projectiles follow a curve path?
8. At the instant a horizontally pointed cannon is fired, a cannonball held at the cannon's side is released and drops to the ground. Which cannonball strikes the ground first, the one fired from the cannon or the one dropped?
9. For a projectile shot into the air, which angle allows the projectile to travel a greater horizontal distance?
10. A projectile is launched into the air. Neglecting air resistance, what is its vertical acceleration? What is its horizontal acceleration?