8. If you are accelerating, you must be doing one of what three things?

1. SPEED UP 2. SLOW DOWN 3. CHANGE DIRECTION

9. How can you determine if something is in motion?

ITS POSITION CHANGES RELATIVE TO ANOTHER OBJECT (REFERENCE POINT).

10. Objects on Earth fall at a rate of what? What are the units? What does this mean the object is doing as it falls? $10 m/s^2$ THE OBJECT IS INCREASING ITS SPEED WITH EACH SECOND OF TIME BY 10m/s.

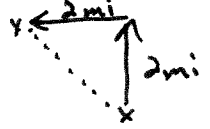
11. Of the following, which items represent speed and which ones represent velocity?

5 mph: SPEED 5 mph east: VELOCITY 10 m/s: SPEED

12. If someone walks 10m north and 10 m south, what is their distance? What is their displacement? DISTANCE: 20m

DISPLACEMENT: 0m

13. A bird flies 2 miles north and then turns and flies 2 miles west. What is their displacement?



$2^2 + 2^2 = c^2$

$4 + 4 = 8$

$\sqrt{8} =$ 2.8 mi NW

14. If you are playing catch with a friend, the ball falls with what type of motion? When you throw the ball, should you aim at, above, or below your friend who is standing on level ground? PROJECTILE MOTION

ABOVE YOUR FRIEND B/C GRAVITY WILL PULL THE OBJECT DOWN WHEN RELEASED FROM YOUR HAND.

15. Ignoring air resistance, if a feather and a bowling ball are dropped, which object hits the ground first?

BOTH HIT THE GROUND AT THE SAME TIME.

16. A place or object used for comparison to determine if something is in motion is called

A. A position.
(B) A reference point.
C. A constant.
D. Velocity.

17. Suppose you are in a car that is going around a curve. The speedometer reads a constant 20 miles per hour. Which of the following is NOT true?

A. You and the car are accelerating.
B. Your speed is constant.
(C) Your velocity is constant.
D. Your acceleration is constant.