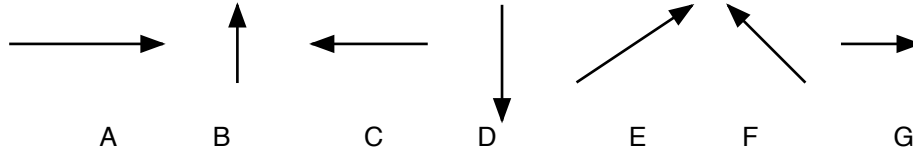


Projectile Motion Review Sheet



1. Sketch the following resultants:
 $G + D$

$F + C$

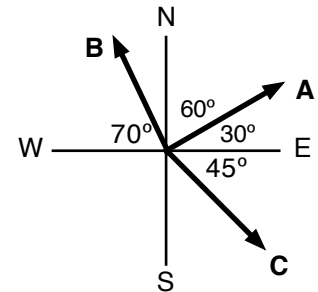
$B + G$

2. For each of the vectors shown in the diagram, what are two ways of describing the direction?

A = _____ or _____

B = _____ or _____

C = _____ or _____



3. You leave your house and walk 20 meters 60° North of East then 50 meters W. How far away from your house are you? Do this via the following steps:

- Draw and label a sketch that shows how the vectors added. (Just sketch, no measuring.)

b. What are the components of the two displacement vectors?

c. Add the the two vectors by components.

d. So how far away from your house are you? (Hint, you know the components of your overall displacement, so what is the magnitude of the displacement?)

4. Calculate the speeds with the given components.

$V_x = 25 \text{ m/s}$

$V_y = -15 \text{ m/s}$

$V_x = 8 \text{ m/s}$

$V_y = 3 \text{ m/s}$

$V =$ _____

$V =$ _____

5. A ball is kicked with a velocity of 14 m/s at an angle of 25° above the horizontal.

$v_x =$ _____ m/s $v_y =$ _____ m/s

Projectile Motion Review Sheet

A pen is thrown straight up with a velocity of 15 m/s.

$$v_x = \text{_____ m/s} \quad v_y = \text{_____ m/s}$$

6. A bullet is shot horizontally with a speed of 800 m/s from an initial height of 2 m.
- How long is the bullet in the air?
 - How far away does the bullet land?
 - If the bullet was just dropped from that height, how long would it take to hit the ground?
7. A student threw a ball horizontally out of a window 8.0 m above the ground. It hits the ground 10 m away.
- What was the initial velocity of the ball?
 - What is the final horizontal velocity of the ball?
 - What is the final vertical velocity?
 - What is the final velocity of the ball (magnitude and direction)?
8. A baseball was hit at 45 m/s at an angle of 45° above the horizontal.
- Calculate the x and y components of initial velocity (V_x and V_{yi})
 - How long was it in the air?
 - How far did it travel horizontally?
 - What was the baseball's maximum height?
9. You are driving 25 m/s at 30° N of E. Calculate the horizontal and vertical components of velocity.

