## **Linear Functions**

## **Key Ideas:**

- 1. Distance and Midpoint
  - label your points  $(x_1, y_1), (x_2, y_2)$
- 2. Parallel / Perpendicular Slopes
  - parallel (same), perpendicular (negative reciprocals)
- 3. Forms of the Equation
  - slope-intercept form
  - slope-point form
  - general form (no fractions or decimals!)

\*Note: Substitute into formulas carefully! Watch your positive and negative signs!!

1. Calculate the **distance** from A(6,-4) to B(1,5).

2. Determine the *midpoint* of A(-5,3) and B(-11,-7).

3. Determine the slope of a line **perpendicular** to 3x - 5y + 10 = 0.

4. Write an equation for a line with a **slope** of  $\frac{-3}{5}$  and a **y-intercept** of -8.

5. Write an equation for a line having a **slope** of 4 and passing through P(-2, 9).

6. Write an equation for a line that passes through the points, A(5,-1) and  $B(-3,\ 4)$ .

7. Write the equation,  $y - 2 = \frac{-2}{3}(x + 6)$  in **general form**.

8. Write the equation of a line, in **general form**, that is **parallel** to 5y = 3x - 1 and passes through the point, P(8, -2).