Slope	Point-Slope Formula	Equation of Line
$m = \dfrac{y_2 - y_1}{x_2 - x_1}$	$y - y_1 = m(x - x_1)$	$y = mx + b$

Follow the directions provided within each problem. The information above may be helpful.

1) Given the points (2, 1) and (5,7), calculate the slope of the line that contains them.

2) Calculate the slope of the line that contains: (-3, 11) and (5, -5).

3) Finish this sentence: "Lines that are parallel have slopes that are _____."

4) Finish this sentence: "Lines that are perpendicular have slopes that are _____."

5) Write the equation of three lines that are all parallel to y = 3x − 1.
a)

b)

c)

6) Write the equation of three lines that are all perpendicular to y = -2x + 5.
a)

b)

c)

7) Write an equation of a line that is parallel to $y = 3x - 1$ but contains the point (1, 1).

8) Write an equation of a line that is parallel to $y = -5x + 4$ but contains the point (-2, 3).

9) Write an equation of a line that is perpendicular to $y = 2x + 1$ but contains the point (4, -2).

10) Write an equation of a line that is perpendicular to $y = -4x$ but contains the point (8, 2).

11) Graph the equation $y = 3x - 1$ and your solution to #7 on the same graph to verify they are parallel lines. Sketch the lines below.

12) Graph the equation $y = -4x$ and your solution to #10 on the same graph to verify they are perpendicular lines. Sketch the lines below.
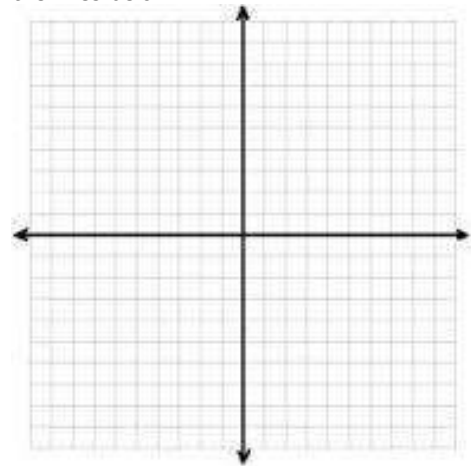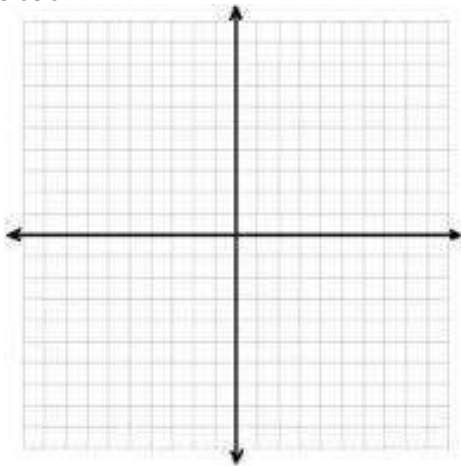
13) Problem #9 involved two lines, the solution to the problem and the given line $y = 2x + 1$. If the slopes of the two lines are multiplied together, what is the result?

14) Both (4, -1) and (-2, d) are on the same line that has a slope of $\frac{1}{2}$. Calculate the value of "d."