Point-Slope Form of a Line

We've already studied slope-intercept form of a line (y = mx + b), today we will look at point-slope form, an alternative way to write linear equations.

The point-slope form of a line with slope *m* and passes through the point (x_1, y_1) is:

$$y - y_1 = m(x - x_1)$$

Write the linear equation in point-slope form with the given point and slope.

1) (4, -7); $m = 4$

2) (0, 5); $m = -\frac{1}{3}$

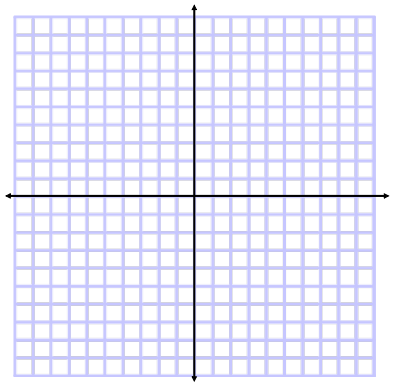
on your own...

3) (-5, 12); $m = -8$

4) (-3, 0); $m = \frac{2}{5}$

Graph the equation.

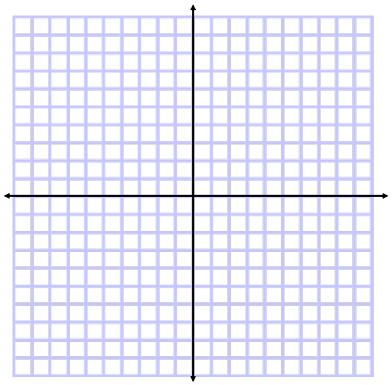
5) $y + 3 = -\frac{4}{3}(x - 2)$



on your own...

Graph the equation.

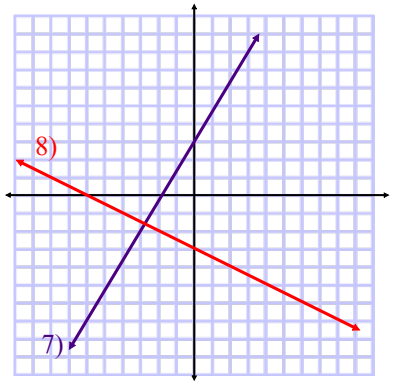
6) $y - 5 = \frac{1}{3}(x + 4)$



5.4 notes.notebook

Write the equation in point-slope form.

7)



on your own...

8)

Write an equation in point-slope form of the line that passes through the given points. Then write the equation in slope-intercept form.

9) (4, -2), (2, 0)

10) (-7, 1), (-3, 6)

Write an equation in point-slope form of the line that passes through the given points. Then write the equation in slope-intercept form.

on your own...

11) (5, 3), (3, -3)

12) A family membership at the local gym is a linear relationship. The Smiths have paid $290 for 4 months of membership and the Collins have paid $590 for 9 months.

a. Write an equation that models the cost (C) in terms of months (M) of membership.

b. What does membership cost for one year?