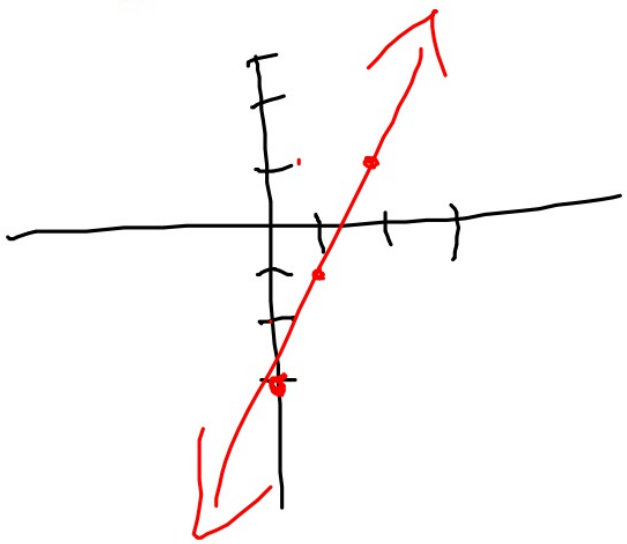
Geometry BELL WORK

Write an equation in slope-intercept form of the line having the given slope and *y*-intercept or given points. Then graph the line.

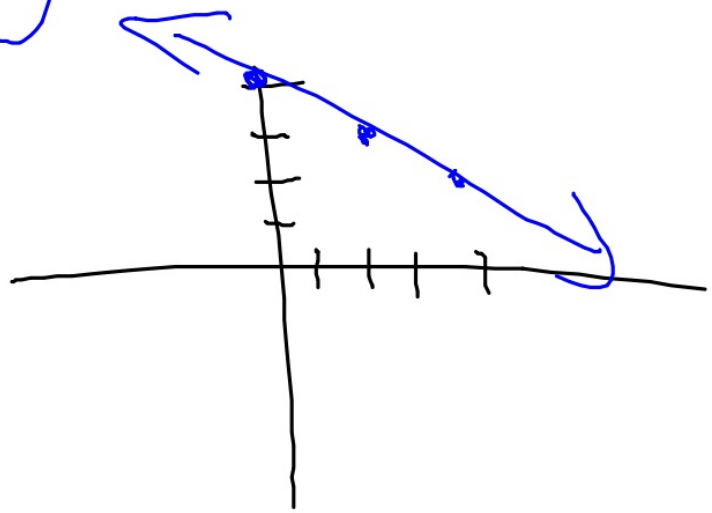
1. m: 2, b: -3

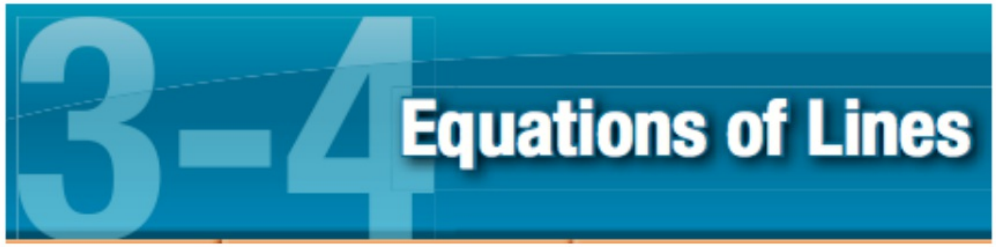
$y = 2x - 3$



2. m: $-\frac{1}{2}$, b: 4

$y = -\frac{1}{2}x + 4$





We found the slopes of lines and looked at the relationship between parallel and perpendicular slopes.

Today we will:

* Write the equation of a line given information about the graph

* Solve problems by writing equations

Two forms of linear equations:

The **slope-intercept form** of a linear equation is

$$y = mx + b$$

where m is the slope of the line and b is the y-intercept.

The **point-slope form** of a linear equation is

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

where (x_1, y_1) is any point on the line and m is the slope of the line.

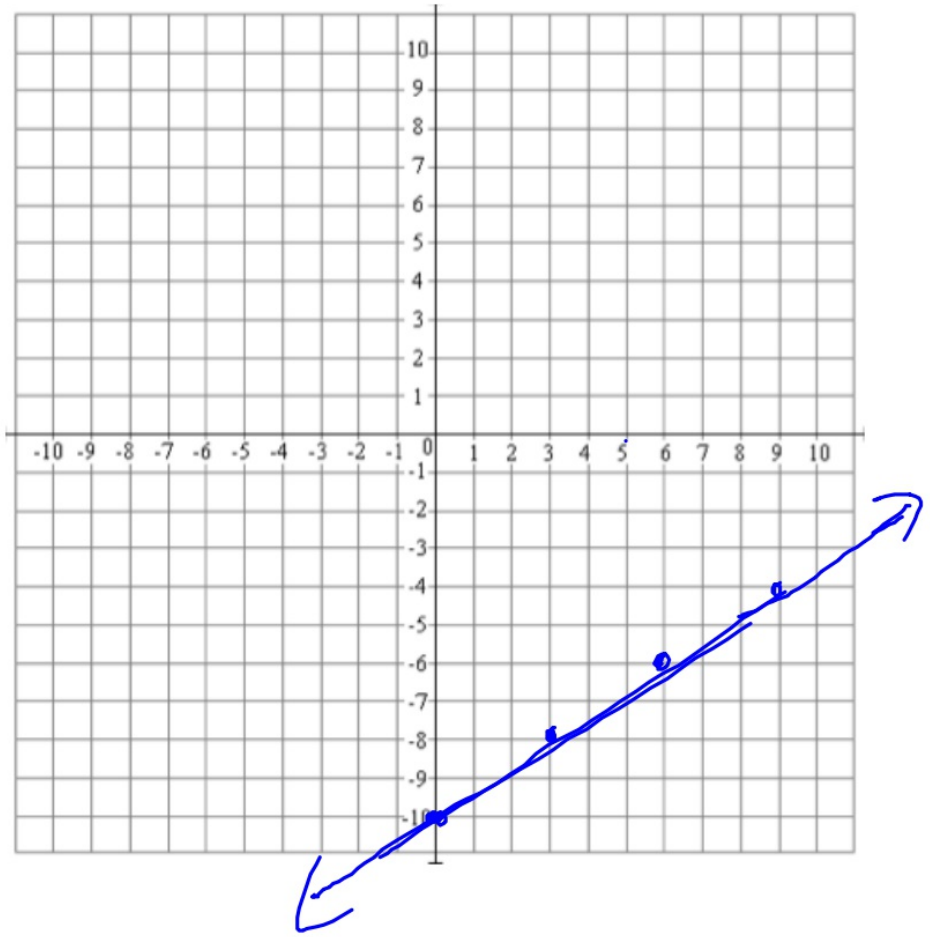
Write the equation of a line with the following conditions, then graph the line.

$m: \frac{2}{3}, b: -10$

$y = \frac{2}{3}x - 10$

rise 2

run 3



Write the equation of a line with the following conditions, then graph the line.

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

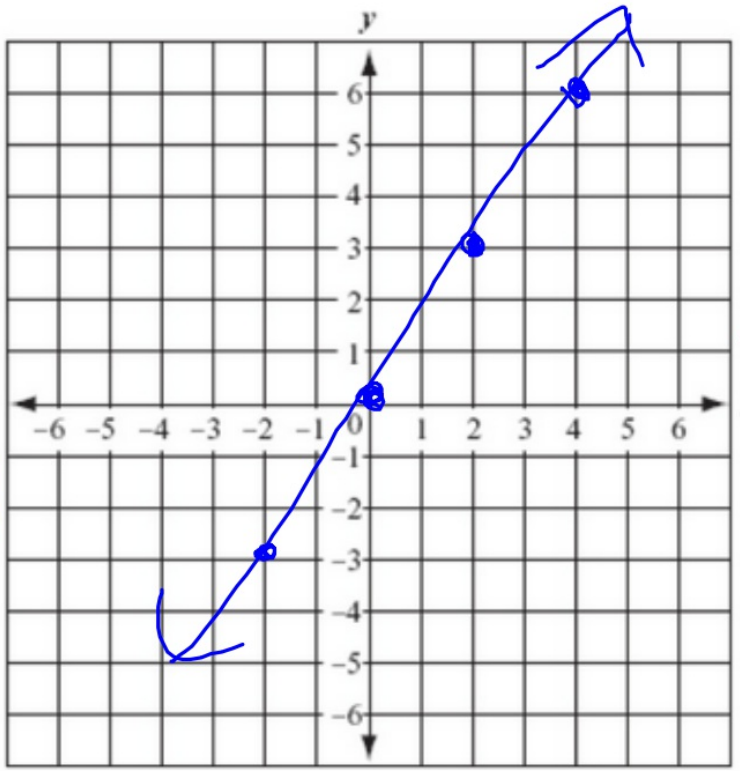
$m: \frac{3}{2}, (4, 6)$ $\quad x_1, y_1$

$y - 6 = \frac{3}{2}(x - 4)$

$y - 6 = \frac{3}{2}x - 6$

$+6 \qquad +6$

$y = \frac{3}{2}x$



$\frac{3}{2} \cdot \frac{4}{1} = \frac{12}{2}$

Assignment:

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