

Bonus Points (added to test) for test corrections:

3 columns - Use a ruler to make vertical lines between them

1 st column	2 nd column	3 rd column
Problem number	Find a similar problem in notes, review, book, or homework.	Rework your problem perfectly (and neatly!)
1) ✓		
2) ✓	Review Sheet #6	
3) X	Review Sheet #5	Your #3 from Test reworked
⋮		
(8)		

Bonus 1)

Bonus 2)

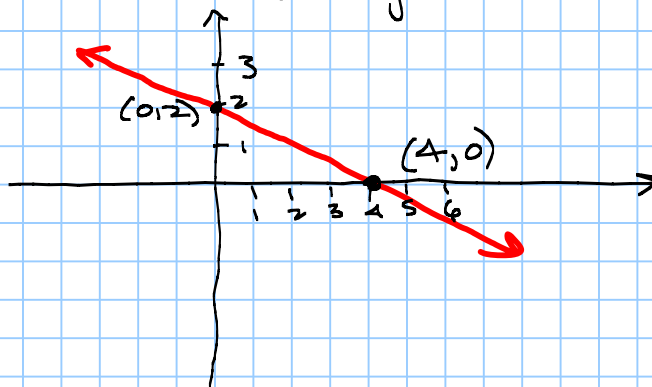
In Column 1, put
✓ if yours was perfect
X if not

Test Corrections Due Tuesday 2/24

3.3: Graphing Lines Using Intercepts

x-intercept: x-coordinate of the point where the graph intersects the x-axis.

y-intercept: y-coordinate of the point where the graph intersects the y-axis.



y-intercept: 2
associated point: (0, 2)

x-intercept: 4
associated point: (4, 0)

- * To find the x-intercept, set $y=0$ and solve for x .
- * To find the y-intercept, set $x=0$ and solve for y .

Example, Graph the line using intercepts.

$$-2x + 3y = 12$$

Find the x-intercept: Set $y=0$:

$$\begin{aligned} -2x + 3(0) &= 12 \\ -2x + 0 &= 12 \\ -2x &= 12 \\ \frac{-2x}{-2} &= \frac{12}{-2} \\ x &= -6 \end{aligned}$$

x-intercept: -6

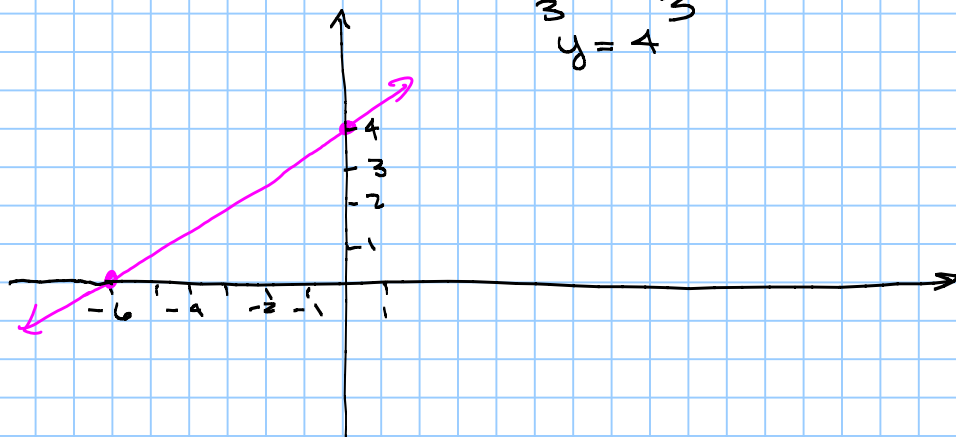
associated point: $(-6, 0)$

Find the y-intercept: Set $x=0$:

$$\begin{aligned} -2x + 3y &= 12 \\ -2(0) + 3y &= 12 \\ 0 + 3y &= 12 \\ 3y &= 12 \\ \frac{3y}{3} &= \frac{12}{3} \\ y &= 4 \end{aligned}$$

y-intercept: 4

associated point: $(0, 4)$



Ex: Find the intercepts. Graph the line.

$$3y = -2x$$

Find the x-intercept:

$$\begin{aligned} \text{Set } y=0 \quad 3(0) &= -2x \\ 0 &= -2x \\ \frac{0}{-2} &= \frac{-2x}{-2} \\ 0 &= x \end{aligned}$$

x-intercept: 0

associated point: $(0, 0)$

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Previous example continued:

Find y-intercept:

Set $x=0$

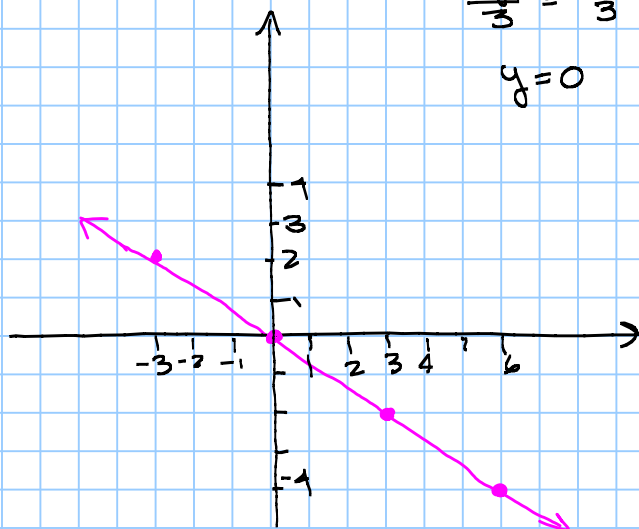
$$3y = -2x$$

$$3y = -2(0)$$

$$3y = 0$$

$$\frac{3y}{3} = \frac{0}{3}$$

$$y = 0$$



$x = -3$

$$3y = -2x$$

$$3y = -2(-3)$$

$$3y = 6$$

$$\frac{3y}{3} = \frac{6}{3}$$

$$y = 2$$

$$(-3, 2)$$

$y = 2$ $3y = -2x$

$$3(2) = -2x$$

$$6 = -2x$$

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

$$-3 = x$$

$$(-3, 2)$$

y-intercept: 0

associated point: (0,0)

Need another point:

$$3y = -2x$$

$x = 3$

$$3y = -2(3)$$

$$3y = -6$$

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

$$y = -2 \quad (3, -2)$$

$x = 6$

$$3y = -2(6)$$

$$3y = -12$$

$$\frac{3y}{3} = \frac{-12}{3}$$

$$y = -4$$

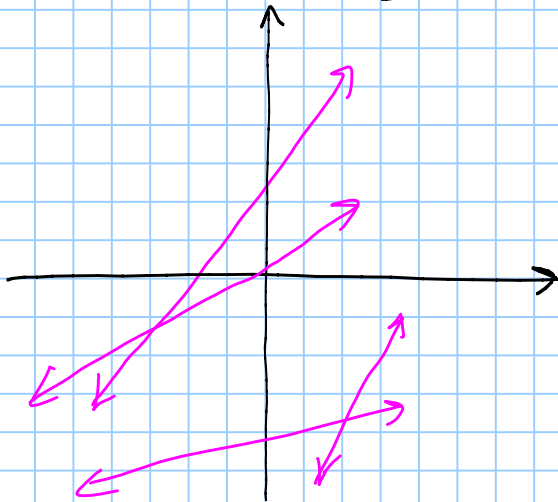
$$(6, -4)$$

3.4: Graphing Lines Using Slope

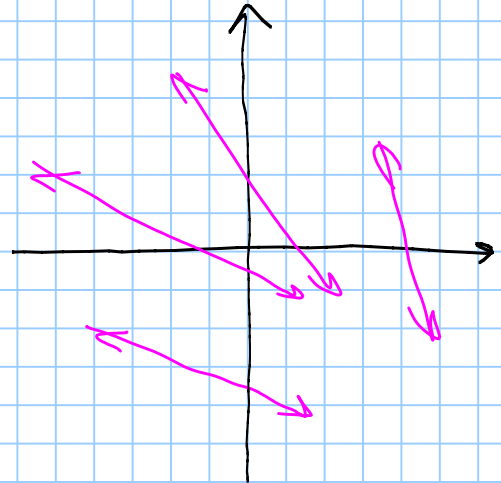
Slope: measures the "steepness" of a line.

Definition: $\text{Slope} = m = \frac{y_2 - y_1}{x_2 - x_1}$, where (x_1, y_1) and (x_2, y_2) are points on the line.

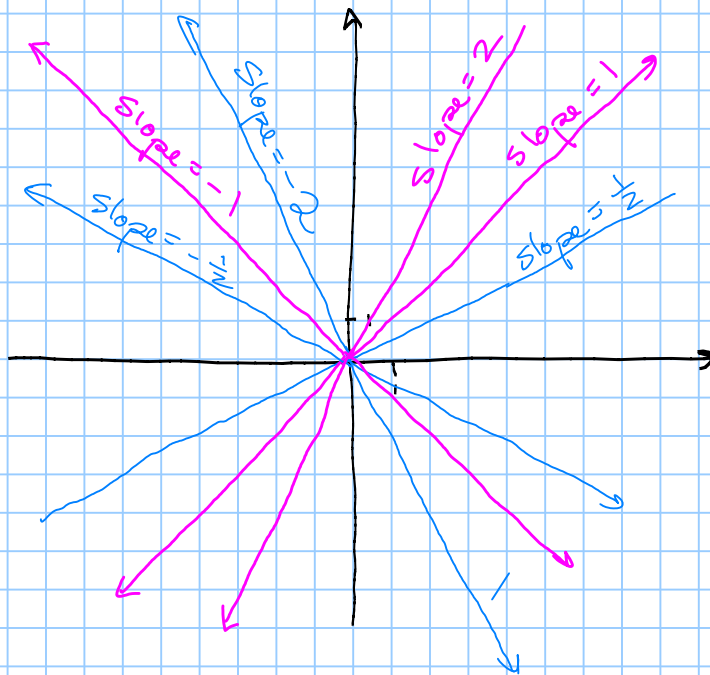
$$\text{Slope} = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{\text{change in } y}{\text{change in } x} = \frac{\text{RISE}}{\text{RUN}}$$



Positive Slopes
Go "uphill" from left to right



Negative Slopes
Go "downhill" from left to right



Note:
 $-1 > -2$

Example: Graph the line that passes through $(1, -3)$ and has slope $\frac{2}{3}$.

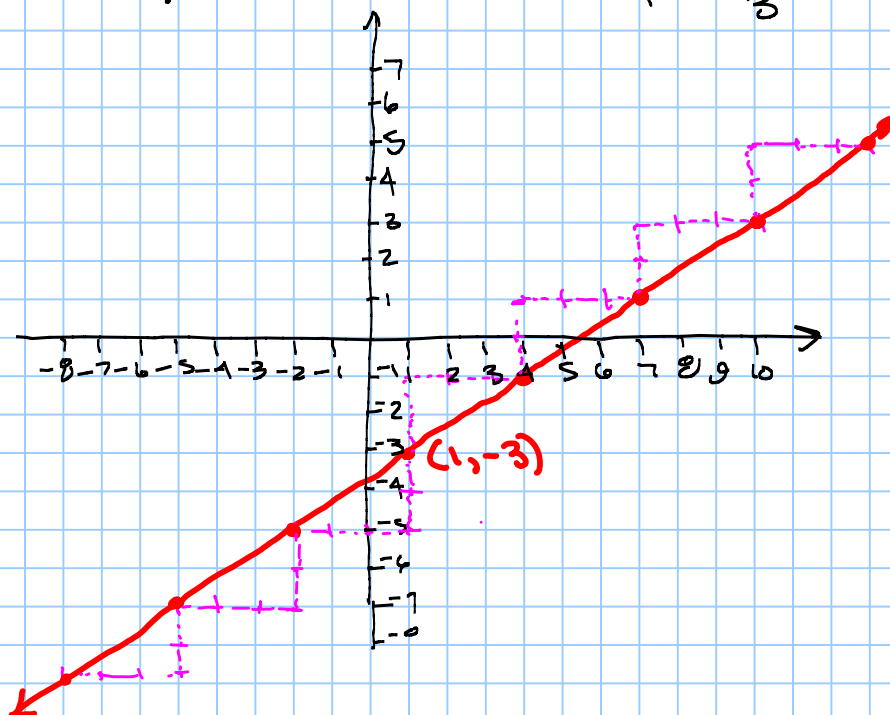
Slope: $m = \frac{2}{3}$

$m = +\frac{2}{3}$



rise = vertical change = 2

run = horizontal change = 3



Ex: Graph the line that passes through $(-1, -2)$ and has slope -3 .

Slope: $m = -3 = -\frac{3}{1}$



rise = vertical change = 3

run = horizontal change = 1

