

Review - Part 3

Linear Relationships

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Evaluate $(2x - 1)$ for

a) $x = 0$

b) $x = 1$

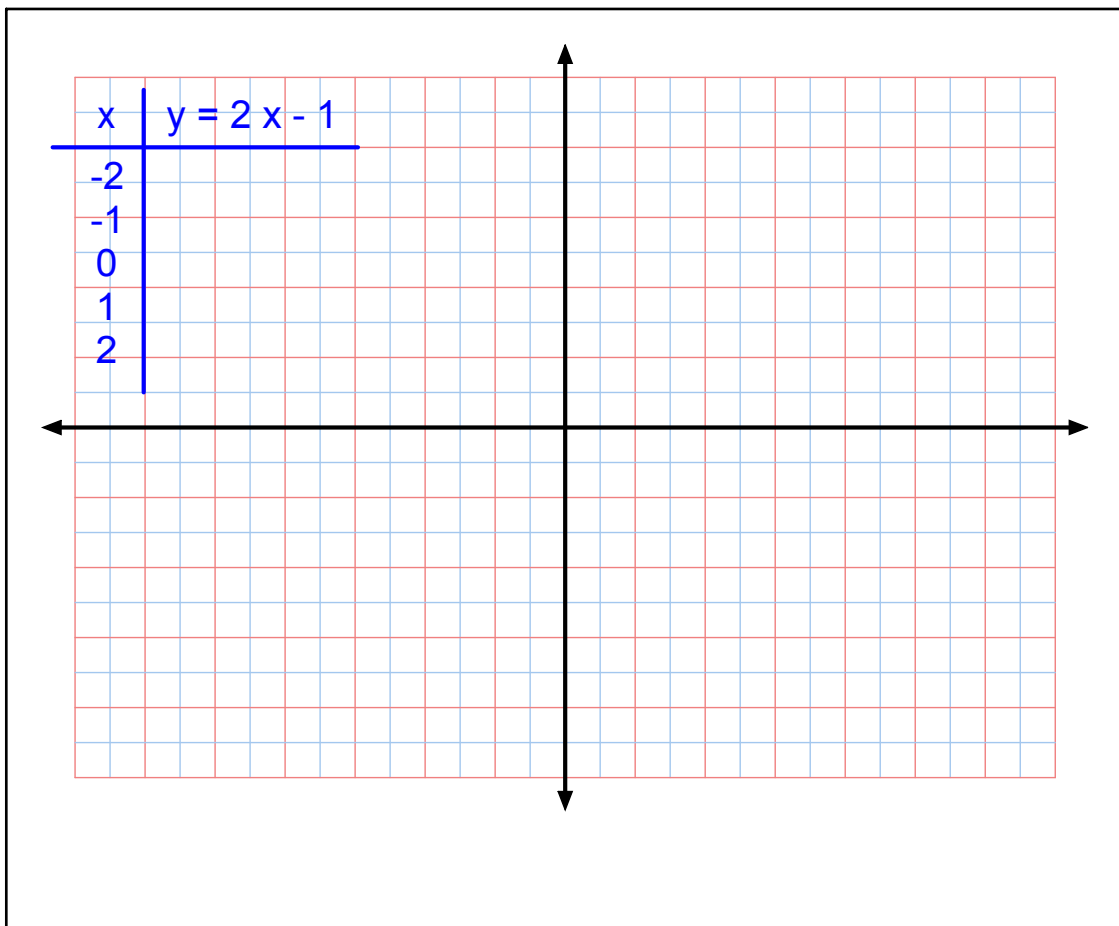
c) $x = 2$

Each value of x will produce a different value for $(2x - 1)$.

We can graph the relationship between x and $(2x - 1)$ by letting $y = 2x - 1$.

Each pair (x, y) is a point on the x - y plane.

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A linear relationship occurs when both variables are linear (i.e., they have an exponent of 1).

For example,

(a) $y = 2x - 1$ (b) $2x - y - 1 = 0$ (c) $2x - y = 1$

It is possible to graph a linear relationship using:

- (1) a table of values
- (2) the y-intercept and x-intercept
- (3) the y-intercept and the slope (m)

To graph a straight line, only **two points** are required (but a third point is a good check).

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Using the intercepts:

The x-intercept is the **point** where the line crosses the _____.

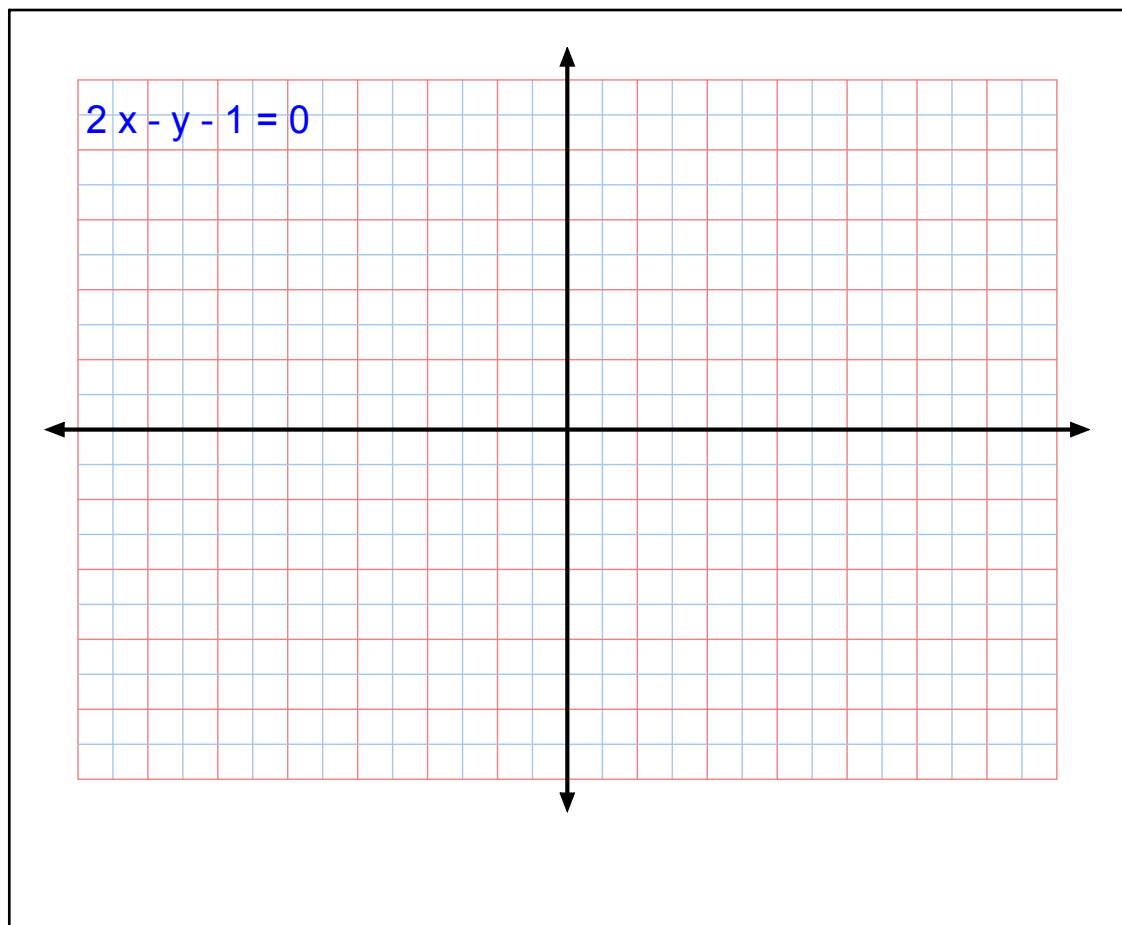
The y-intercept is the **point** where the line crosses the _____.

$$2x - y - 1 = 0$$

To find the x-int, set _____

To find the y-int, set _____

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Using the y-intercept and slope:

Recall:

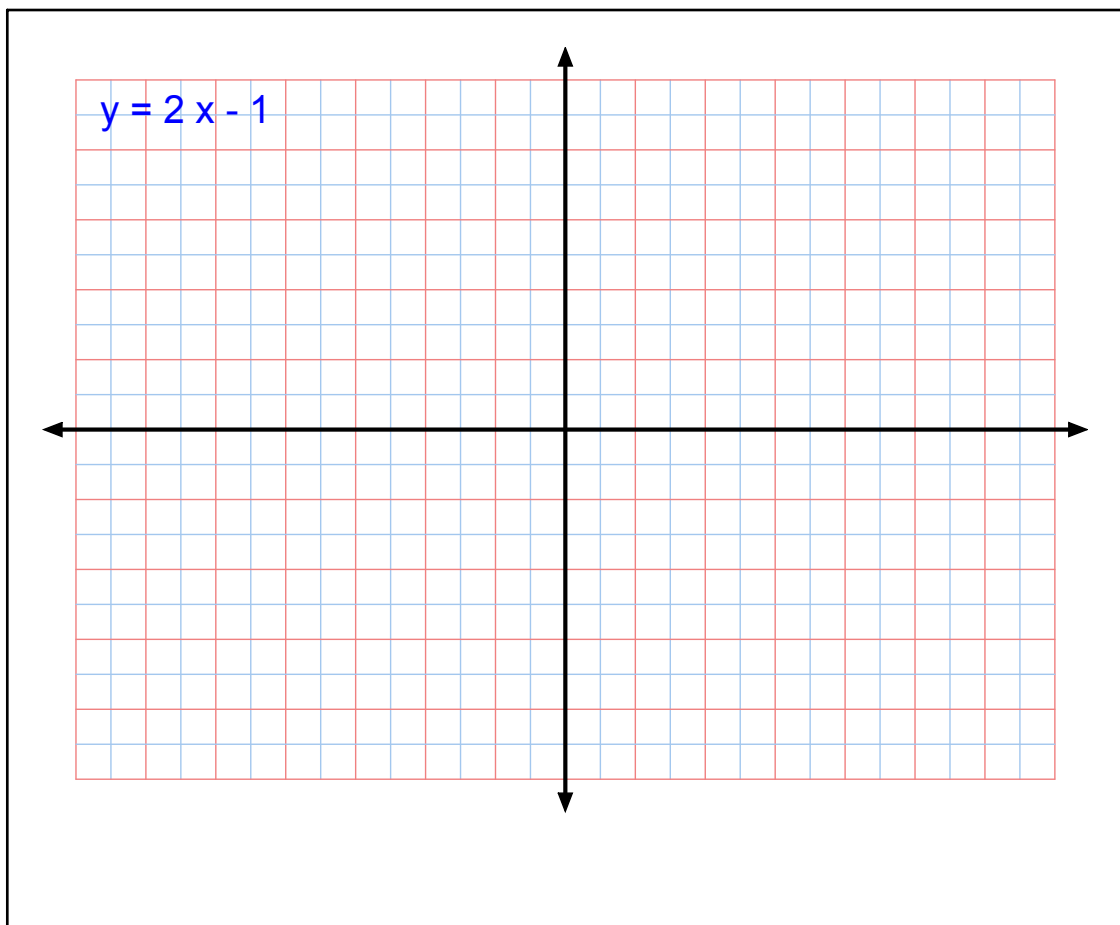
$$m = \text{slope} = \frac{\text{rise}}{\text{run}} =$$

The y-int is our starting point, and we use the slope to find the next point.

A linear equation in slope-intercept form is

$$y = m x + b$$

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Assigned work:

worksheet

Extra practice:

p.4 - 6

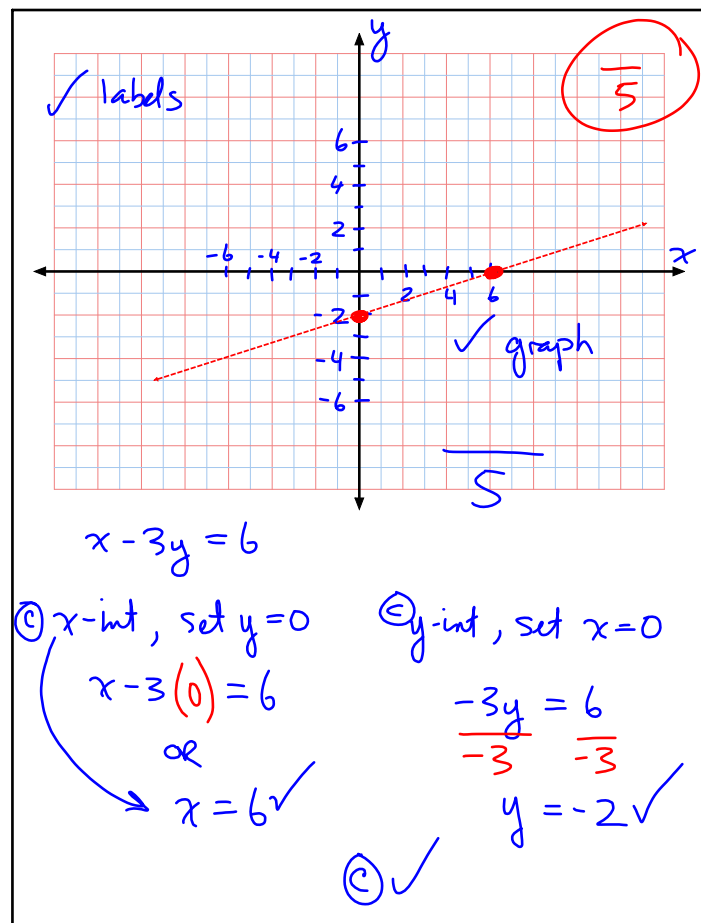
2 - 4, 5ace, 7abc, 11acf

Extra practice:

A-6: p.468 # 1bd, 2abc, 3abcd, 4

A-7: p.470 # 1abc, 2ab, 3d, 4bc, 5bc, 6

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p. 1 #7.

$$y = \underline{3}x + \underline{2}$$

$$y = \underline{m}x + \underline{b}$$

$$\text{slope} = 3$$

$$y\text{-int} = 2$$

$$x\text{-int} = \frac{-2}{3}$$

for x-int, set $y=0$

$$0 = 3x + 2$$

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

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

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p. 1 #8

$$-5x + 2y = 6$$

$$\frac{2y}{2} = \frac{5x}{2} + \frac{6}{2}$$

$$y = \frac{5}{2}x + 3$$

\downarrow \downarrow
 m y-int

x-int, set $y=0$

$$\frac{-5x}{-5} = \frac{6}{-5}$$

$$x = \frac{6}{-5}$$

$$x = \frac{-6}{5}$$

$$-\frac{6}{5} = \frac{-6}{5} = \frac{6}{-5}$$

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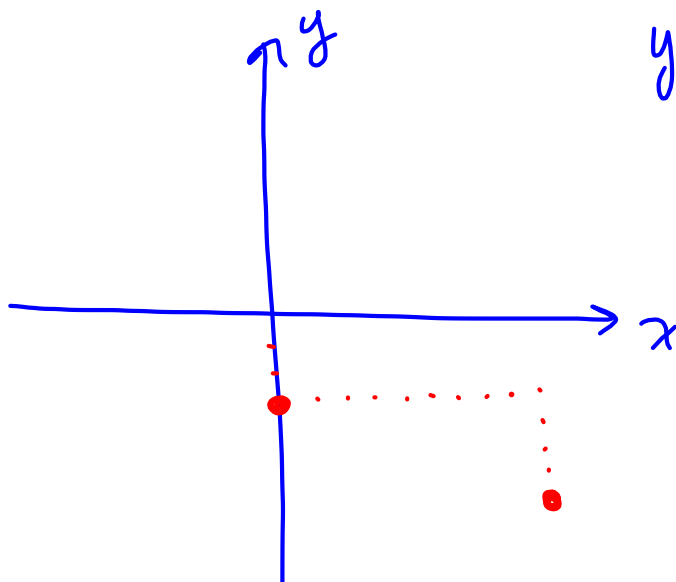
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p. 2 #4.

$$y = -\frac{4}{9}x - 3$$

$$m = -\frac{4}{9} \quad \frac{\text{rise}}{\text{run}}$$

$$y\text{-int} = -3$$



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