

Name, Date, Hour:

Key

Learning Target:

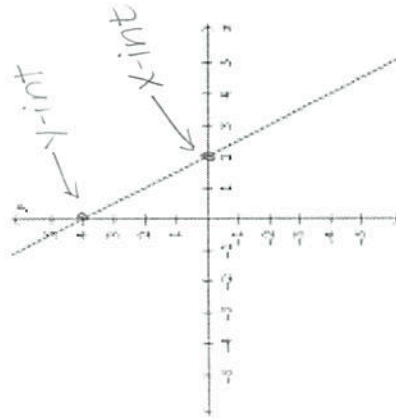
3.5: Write & graph equations of lines

Homework:

Day 8

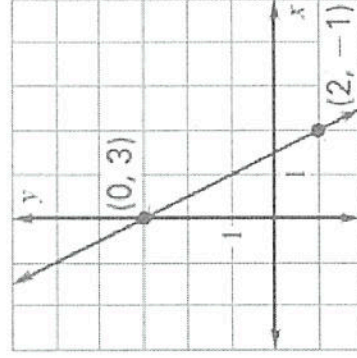
BOX 1

Slope Intercept Form	$y = mx + b$ $m = \text{slope}$ $b = \text{y-intercept}$
Standard Form	$Ax + By = C$
x-intercept	where the graph crosses the x-axis
y-intercept	where the graph crosses the y-axis



BOX 2 - Example 1

Write an equation of the line in slope-intercept form.



y-intercept $\rightarrow (0, 3)$
 slope $\rightarrow \frac{4}{-2} = -2$

$y = -2x + 3$

BOX 3 - Example 2

Write an equation of the line passing through the point $(1, -1)$ that is parallel to the line with the equation $y = 2x - 1$.

$m = 2$ $(1, -1)$

$y = 2x - 3$

$y = 2x + b$
 $-1 = 2(1) + b$
 $-1 = 2 + b$
 $-3 = b$

BOX 4 - Example 3

Write an equation of the line passing through the point $(3, 2)$ that is perpendicular to the line with the equation $y = -3x + 1$.

$m = \frac{1}{3}$ $(3, 2)$

$y = \frac{1}{3}x + 1$

$a = \frac{1}{3}(3) + b$
 $2 = 1 + b$
 $1 = b$

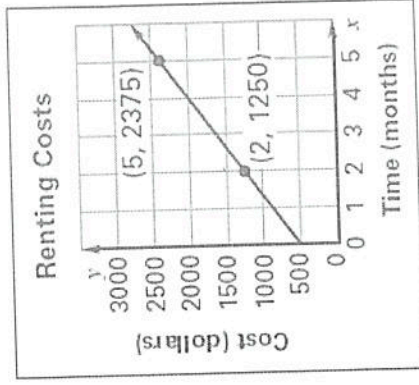
BOX 5 - Example 4

The graph at right models the total cost of renting an apartment. Write an equation of the line. Explain the meaning of the slope and the y-intercept of the line.

$$m = \frac{2375 - 1250}{5 - 2} = \frac{1125}{3} = 375 \quad b = (0, 500)$$

$$y = 375x + 500$$

The cost of renting an apartment starts at \$500 & increases by \$375 each month.



BOX 6 - Example 6

Graph $2x + 3y = 6$. The equation is in STANDARD FORM, so use the intercepts.

X-intercept

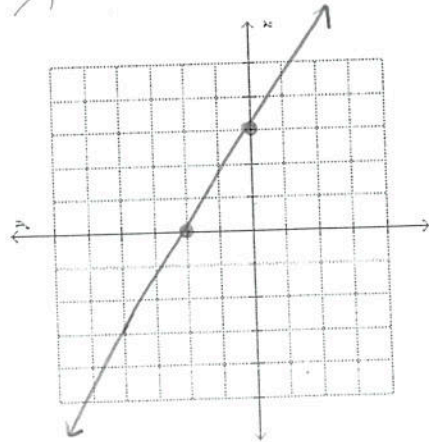
$$2x = 6$$

$$x = 3$$

Y-intercept

$$3y = 6$$

$$y = 2$$



BOX 7 - Example 7

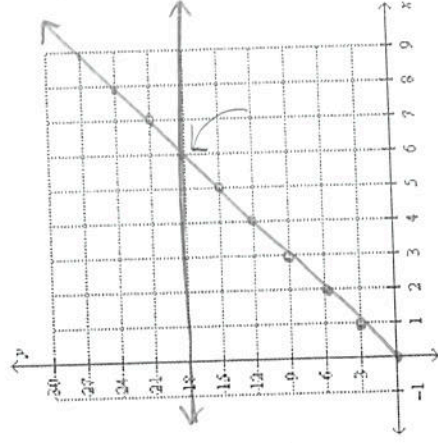
Solve a real world problem. You can buy a magazine at a store for \$3. You can subscribe yearly to the magazine for a flat fee of \$18. After how many magazines is the subscription a better buy?

$x = \#$ of magazines

$$y = 3x$$

$$y = 18$$

The yearly subscription is a better buy after 6 magazines



cost

magazines