

## NOTES: Sections 4.3-4.4 – Graphing Horizontal and Vertical Lines and Graphing Lines Using Intercepts

Goals: #1 – I can graph horizontal and vertical lines.



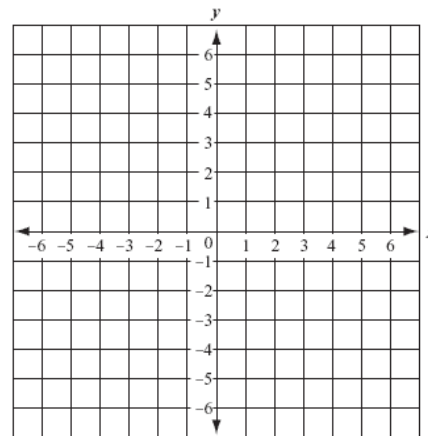
#2 – I can find the  $x$ - and  $y$ -intercepts of a linear equation and use them to graph.

*Homework: Sections 4.3-4.4 Worksheet*

**Warm Up:**

- Use a table of values to graph the equation  $y = -x - 1$ .

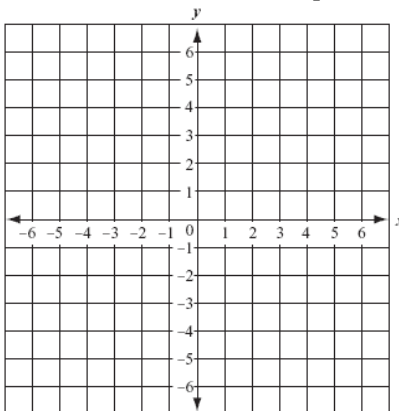
$x$	$y$



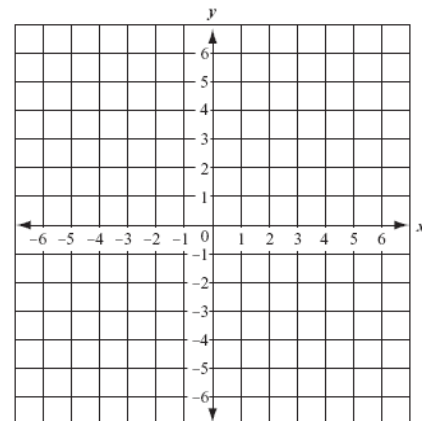
- Rewrite the equation  $5y - 2x = 15$  in function form.

**Exploration #1:** Work with a partner. Plot the points from the table of values.

$x$	$y$
-5	4
-3	4
0	4
2	4
6	4



$x$	$y$
-1	-4
-1	-2
-1	1
-1	5
-1	6



What do you notice? How could you model this line?

Name: \_\_\_\_\_ Hour: \_\_\_\_\_ Date: \_\_\_\_\_

**Notes:**

Equations of vertical lines are written as: \_\_\_\_\_.

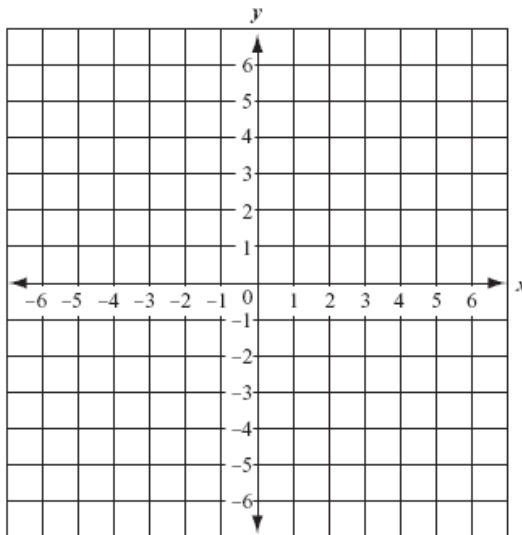
Picture:

Equations of horizontal lines are written as: \_\_\_\_\_.

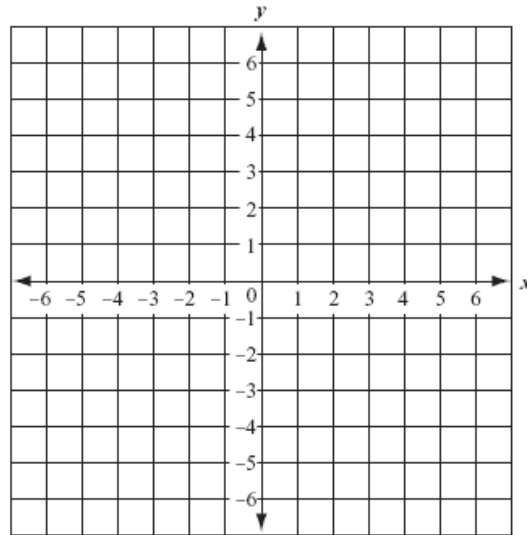
Picture:

**Example #1:** Graph the equation.

a.  $y = -5$

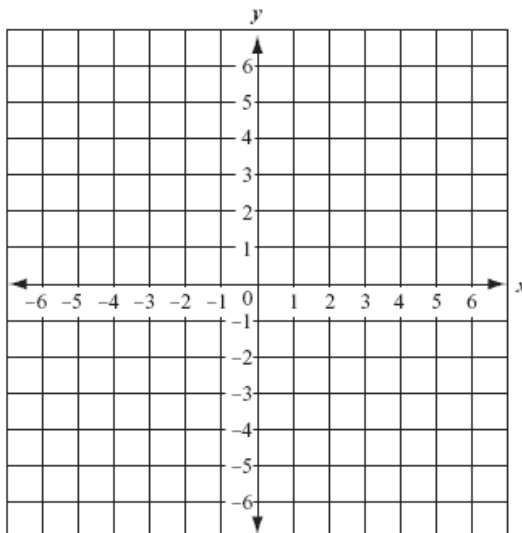


b.  $x = \frac{3}{4}$

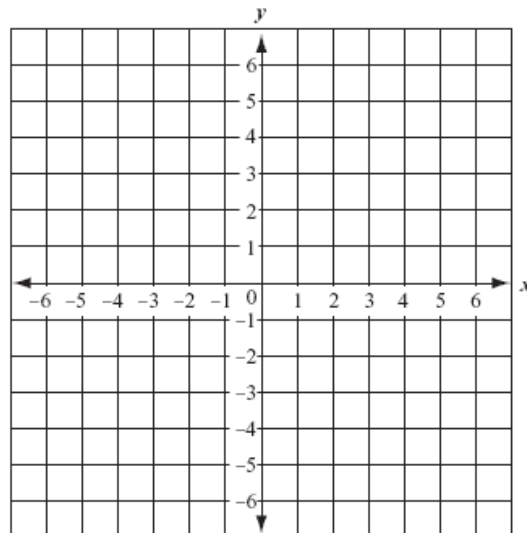


**CHALLENGE:** Graph the equation.

a.  $7x = 21$



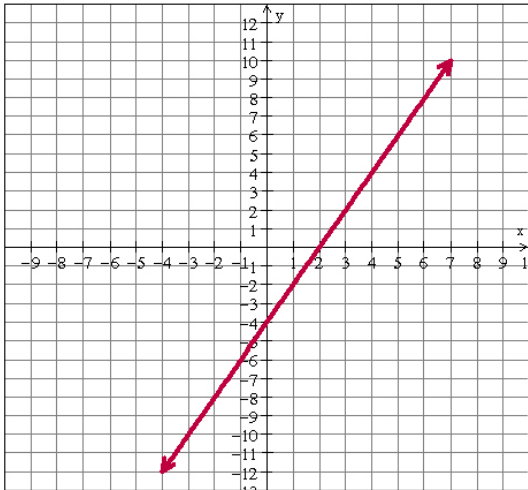
b.  $20 + 5y = 0$



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**Exploration #2:** Work with a partner.

1. What do you know about an  $x$ -intercept?
2. What do you know about a  $y$ -intercept?
3. What would the  $x$ - and  $y$ -intercepts of this graph be? Write as an ordered pair.



$x$ -intercept:

$y$ -intercept:

**Notes:**

The \_\_\_\_\_ is the point where a graph intersects the  $x$ -axis. The  $y$  value for the  $x$ -intercept is always \_\_\_\_\_.

The \_\_\_\_\_ is the point where a graph intersects the  $y$ -axis. The  $x$  value for the  $y$ -intercept is always \_\_\_\_\_.

**Example #2:** Find the  $x$ - and  $y$ -intercepts of the line with the given equation. Write your intercepts as ordered pairs.

1.  $x - y = 3$

2.  $2x + 4y = 16$

$x$ -intercept: \_\_\_\_\_

$x$ -intercept: \_\_\_\_\_

$y$ -intercept: \_\_\_\_\_

$y$ -intercept: \_\_\_\_\_

Name: \_\_\_\_\_ Hour: \_\_\_\_\_ Date: \_\_\_\_\_

**Example #3:** Graph the following equations using its  $x$ - and  $y$ -intercepts. Write your intercepts as ordered pairs.

1.  $3x - 6y = 12$

2.  $-x - y = 3$

$x$ -intercept: \_\_\_\_\_

$x$ -intercept: \_\_\_\_\_

$y$ -intercept: \_\_\_\_\_

$y$ -intercept: \_\_\_\_\_

