

**APRIL 4, 2016**

**UNIT 6: LINEAR RELATIONS**

**4.3: ANOTHER FORM OF THE  
EQUATION FOR A  
LINEAR RELATION**

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*MATH 9*



## **WHAT'S THE POINT OF TODAY'S LESSON?**

**We will continue working on the Math 9 Specific Curriculum Outcome (SCO) "Patterns and Relations 2" OR "PR2" which states:**

**"Graph linear relations, analyze the graph and interpolate or extrapolate to solve problems."**

**WARM UP:** Graph the following 5 LINEAR relations on the grid below.

x	y
0	-2
1	0
2	2
3	4

+1

+2

$y = 3x$

x	y
0	0
1	3
2	6

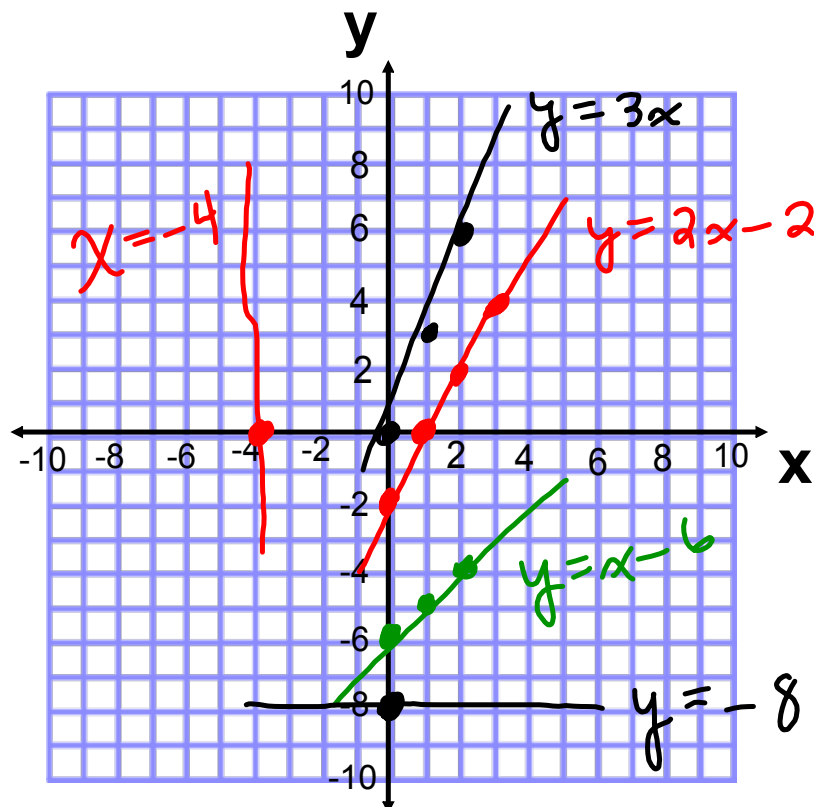
$y = x - 6$

x	y
0	-6
1	-5
2	-4

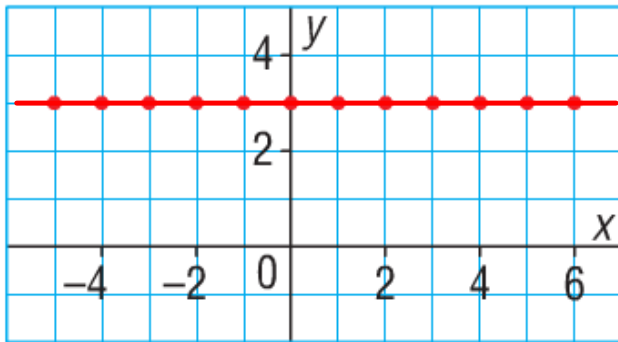
$x = -4$   
Vertical

$y = -8$   
Horizontal

$y = 2x - 2$



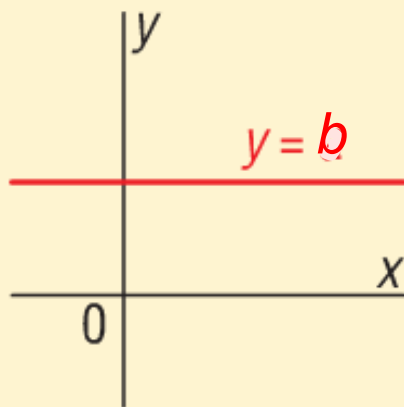
**HOMEWORK QUESTIONS?**  
**(page 178, #4 TO #7)**

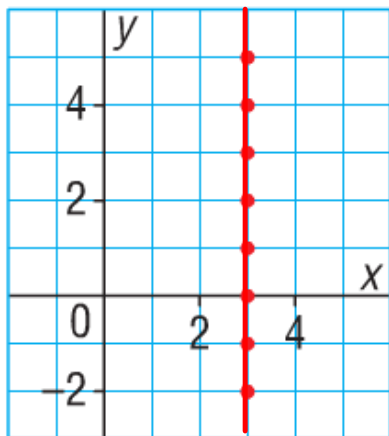


Equation?  $y = 3$

x	y
0	3
1	3
2	3
3	3
4	3

The graph of the equation  $y = b$ , where  $b$  is a constant, is a horizontal line. Every point on the graph has a  $y$ -coordinate of  $b$ .

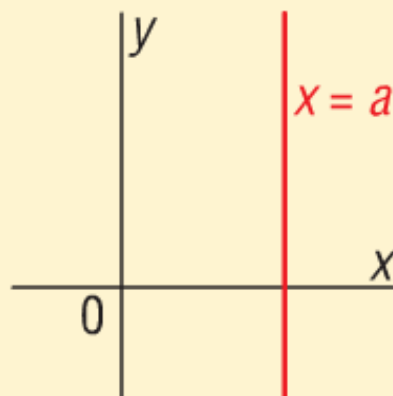




Equation?  $x = 3$

x	y
3	0
3	1
3	2
3	3
3	4

The graph of the equation  $x = a$ , where  $a$  is a constant, is a vertical line. Every point on the graph has an  $x$ -coordinate of  $a$ .





## **EQUATIONS FOR LINEAR RELATIONS:**

$$**y = mx + b**$$

$$**y = b**$$

$$**x = a**$$

### Example 1

### Graphing and Describing Horizontal and Vertical Lines

For each equation below:

- i) Graph the equation.
- ii) Describe the graph.

a)  $x = -4$

Vertical

b)  $y + 2 = 0$

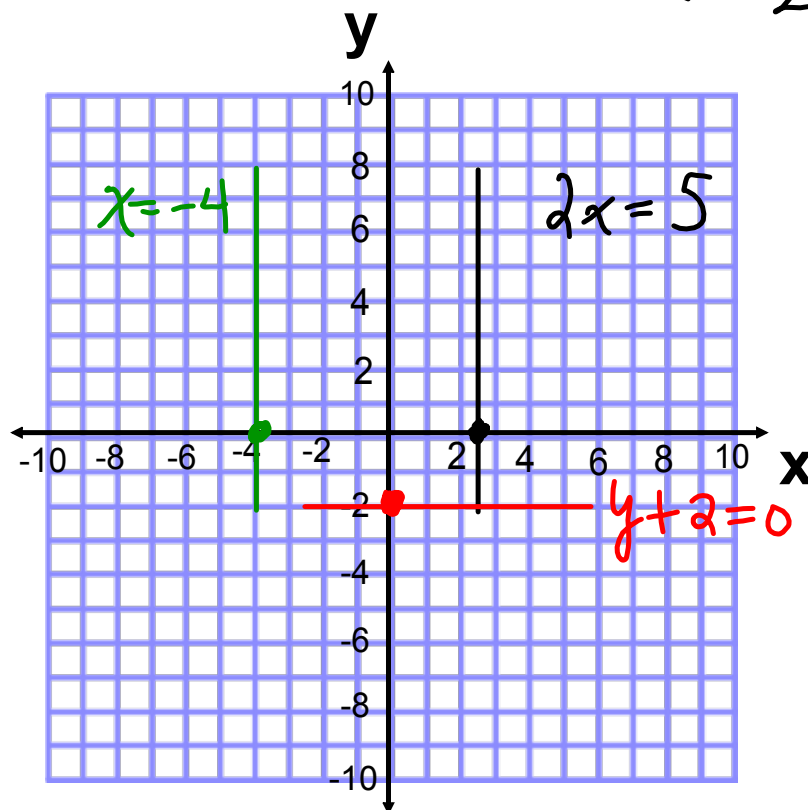
$y = -2$

Vertical

c)  $\frac{2x}{2} = \frac{5}{2}$

$x = \frac{5}{2}$

$x = 2\frac{1}{2}$

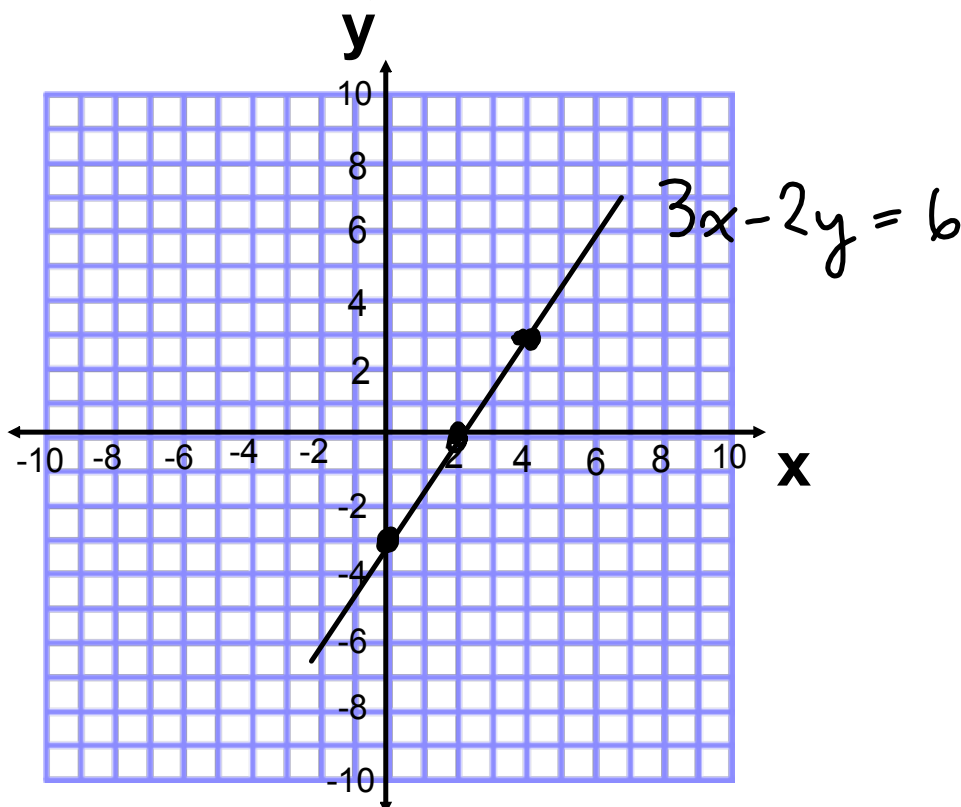


**Example 2****Graphing an Equation in the Form  $ax + by = c$** 

For the equation  $3x - 2y = 6$ :

- Make a table of values for  $x = -4, 0,$  and  $4$ .
- Graph the equation.

$$\begin{aligned} 3x - 2y &= 6 \\ \cancel{-2y} &= \frac{-3x + 6}{-2} \\ y &= \frac{3}{2}x - 3 \end{aligned}$$



**CONCEPT REINFORCEMENT:**

***MMS9:***

**PAGE 179: #8, #11, #12 and #13(a)**

**NOTE: MID-UNIT QUIZ WED.!!!**