

**Unit 3 Day 17**  
**Graph Linear Equations by tables**

**Solution:** A solution is the value or values that make a mathematical sentence TRUE.

Which of the following **ordered pairs** is/are a solution(s) of  $3x - y = 7$ ?

- |                        |                      |                         |                      |
|------------------------|----------------------|-------------------------|----------------------|
| a) (3,4)               | b) (1,-4)            | c) (5,-3)               | d) (-1,-10)          |
| $3(3) - 4 = 7$         | $3(1) - (-4) = 7$    | $3(5) - (-3) = 7$       | $3(-1) - (-10) = 7$  |
| $9 - 4 = 7$            | $3 + 4 = 7$          | $15 + 3 = 7$            | $-3 + 10 = 7$        |
| $5 \neq 7$ <b>(NO)</b> | $7 = 7$ <b>(yes)</b> | $18 \neq 7$ <b>(NO)</b> | $7 = 7$ <b>(yes)</b> |

What you may realize is that there are MANY ordered pairs that make that sentence true.

Can you think of another? **(0,-7)**

Coming up with ALL the ordered pairs is tough this way. Wouldn't it be nice to have a way to come up with and show all ordered pairs? Graph it!

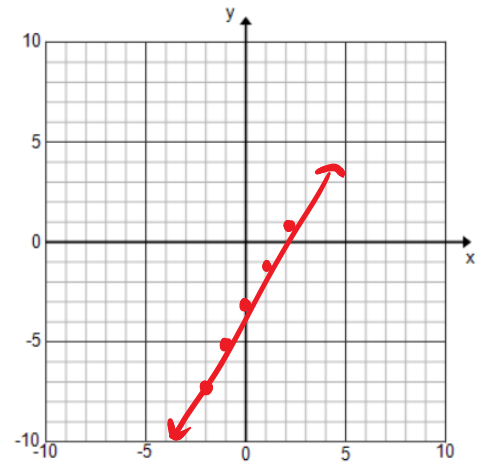
**Ex 1:** Graph:  $-2x + y = -3$   $\rightarrow$   $-2x + y = -3$   
 $y = 2x - 3$

Step 1: Solve the equation for y.

Step 2: Make a table.

$x$	$y$	$y = 2(-2) - 3$	$y = 2(0) - 3$
-2	-7	$y = -4 - 3$	$y = 0 - 3$
-1	-5	$y = -7$	$y = -3$
0	-3	$y = 2(-1) - 3$	$y = 2(1) - 3$
1	-1	$y = -2 - 3$	$y = 2 - 3$
2	1	$y = -5$	$y = -1$
		$y = 2(2) - 3$	$y = 4 - 3$
			$y = 1$

Step 3: Plot the points.



**Ex 2:** Graph:  $4x + 2y = 4$   
 $-4x \quad -4x$   $\rightarrow$   $2y = -4x + 4$   
 $y = -2x + 2$

Step 1: Solve the equation for y.

Step 2: Make a table.

$x$	$y$	$y = -2(-2) + 2$	$y = -2(0) + 2$
-2	6	$y = 4 + 2$	$y = 0 + 2$
-1	4	$y = 6$	$y = 2$
0	2	$y = -2(-1) + 2$	$y = -2(1) + 2$
1	0	$y = 2 + 2$	$y = -2 + 2$
2	-2	$y = 4$	$y = 0$

Step 3: Plot the points.

