Tuesday, August 14, 2012

Graphing with Coordinates

- Ordered Pairs are the "address" of a particular point.

- Every equation that has 2 variables has many ordered pair solutions!

- Consider the equation: $y = 3x + 4$

  - What is the value of y when $x = 1$?

$$y = 3(1) + 4 = 3 + 4 = 7 \qquad \boxed{(1, 7)}$$

  - What is the value of x when $y = 31$?
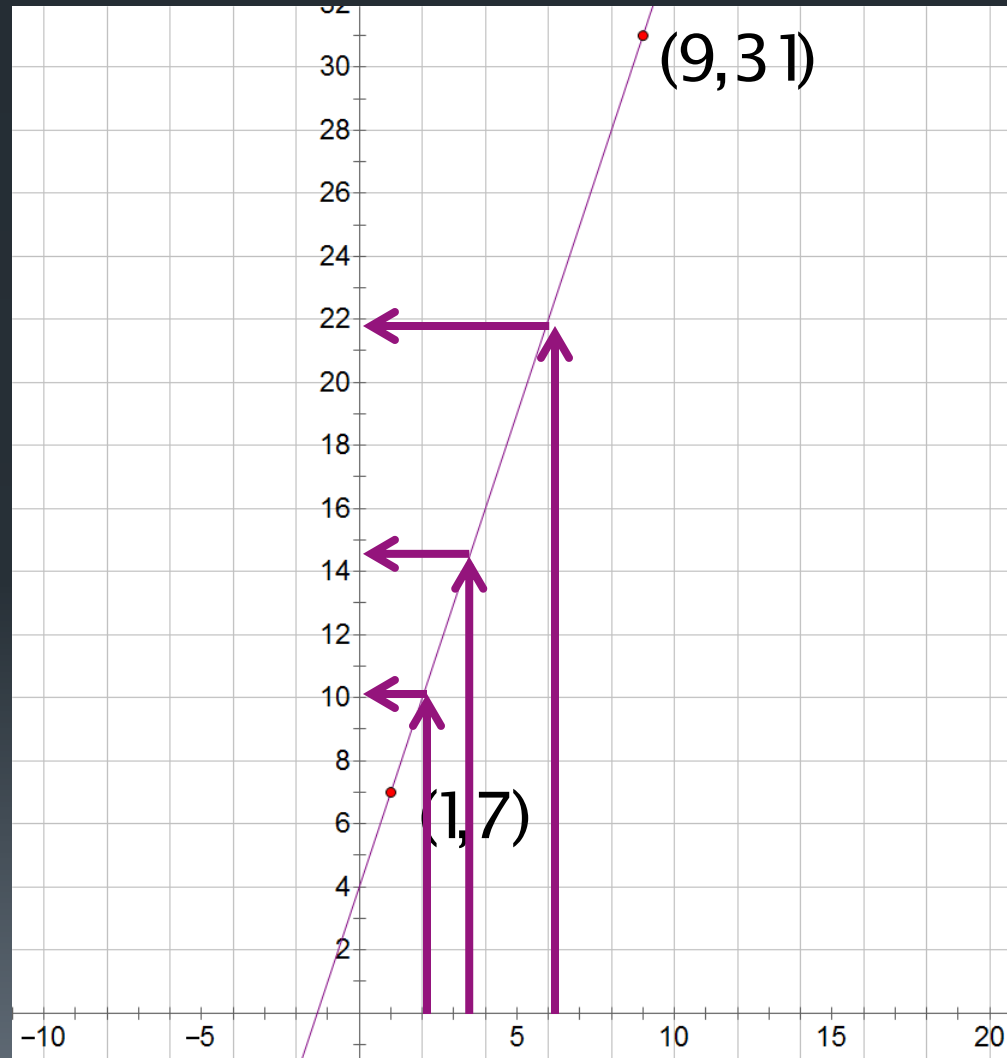
$$31 = 3x + 4$$
$$-4 \qquad\qquad -4$$
$$\frac{27}{3} = \frac{3x}{3} \qquad \boxed{(9, 31)}$$
$$9 = x$$

- Both ordered pairs (1, 7) and (9, 31) are solutions to the equation!

Graphing with Coordinates

- So, how can we see what **_all_** the solutions look like?
  - We plot them on a coordinate plane!

Using this line, we can now easily see what the value of *y* is when *x* is…

2	*y* = 10
6	*y* = 22
3.5	*y* =14.5

(9,31)

(1,7)

Graphing with Coordinates

- Let's take a look at another type of example problem!
  - Make a graph of the equation $y = 2x + 1$.
  - Use $x = 0, 1, 2, 3$ and 4 and make a table.

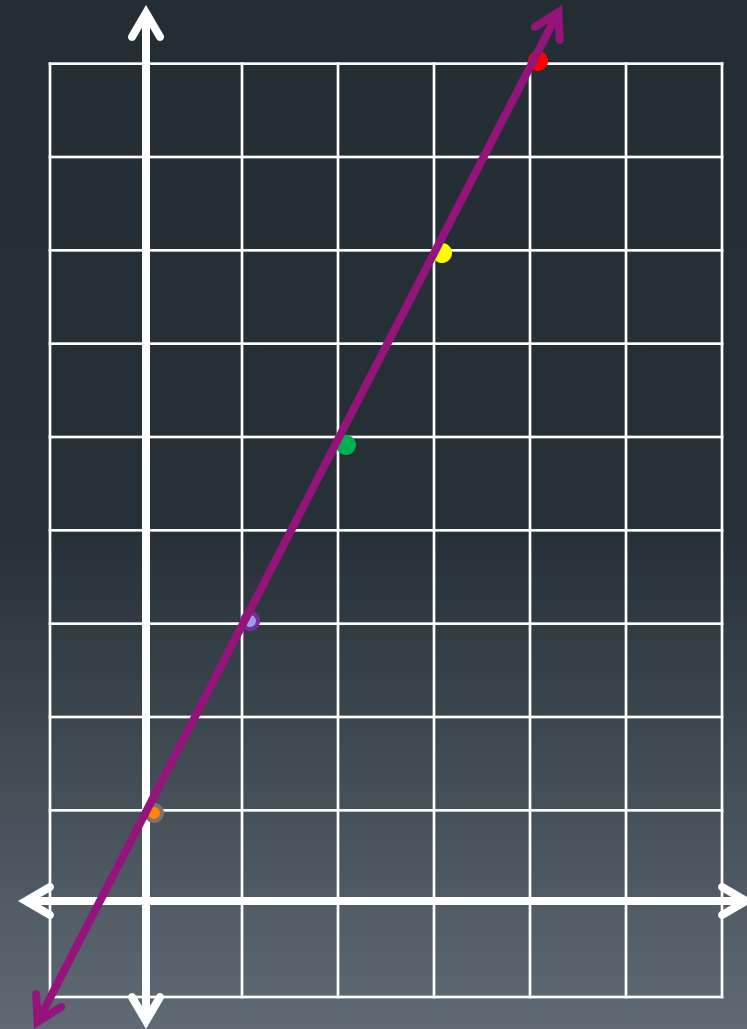| x	y
0	1
1	3
2	5
3	7
4	9

$$y = 2x + 1$$
$$y = 2(0) + 1 = 1$$
$$y = 2(1) + 1 = 3$$
$$y = 2(2) + 1 = 5$$
$$y = 2(3) + 1 = 7$$
$$y = 2(4) + 1 = 9$$

Homework

- p28 #44-58 evens
  - You will need to use graph paper for this assignment
  - Don't have graph paper? You can print some from one of the Helpful Links on my website!