

Monday, December 3, 2012

Agenda

- TISK & No MM
- Receive graded work
- Lesson 11-1: Graphing linear equations
- Homework: p. 543 #12 - 18 evens - ON GRAPH PAPER

TISK

Solve each equation for y .

- 1) $6y - 12x = 24$
- 2) $-2y - 4x = 20$
- 3) $2y - 5x = 16$
- 4) $-3y + 6x = 18$

Have a signed Ch. 9 Test to show me?
Have it out on your desk!

§11.1 Graphing Linear Equations



I should write this down!

- For any equation with an x and a y , there are many solutions that fit the equation.

$$\begin{array}{ll} y = x - 7 & x = 13, y = 6 \\ x = -3, y = -10 & x = 0, y = -7 \end{array}$$

- Each solution can be written as an ordered pair: $(-3, -10)$, $(13, 6)$, and $(0, -7)$

- **A graph of an equation is simply a picture of all solutions of an equation.**

How do you tell if an equation is linear?

- **Graph it:**
 - Does it make a straight line? Then it's linear!
- **Look at the variables:**
 - If x and y have exponents of 1 each, then it's linear!

Graph the equation.

$y = x - 7$
 (-3, -10), (13, 6), and (0, -7)

I can just read along here

This line represents ALL the points that satisfy the equation $y = x - 7$.

Weird Equations

How do you find solutions of equations where either the x or the y is missing?

For example: $x = 9$ $y = -2$

x	y
9	-5
9	0
9	5

x	y
-7	-2
0	-2
8	-2

I should write this down!

Writing Equations in Function Form.

What is "function form"?

When an equation is written so that y is isolated.

Solve for y in terms of x .

$$\begin{array}{r} 3y + 2x = 15 \\ -2x \quad -2x \\ \hline 3y = -2x + 15 \\ \hline 3 \quad 3 \\ \hline y = -\frac{2}{3}x + 5 \end{array}$$

$$\begin{array}{r} 6(\frac{4}{3}y + \frac{1}{6}x) = 5 \cdot 6 \\ 8y + 1x = 30 \\ -1x \quad -1x \\ \hline 8y = -1x + 30 \\ \hline 8 \quad 8 \\ \hline y = -\frac{1}{8}x + \frac{15}{4} \end{array}$$

I should write this down!

How to Graph an Equation

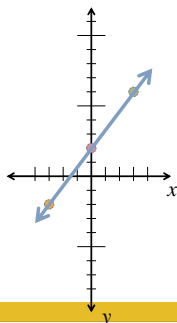
- 1) Write the equation in function form.
- 2) Choose 3 values of x .
(one positive, one negative, and zero)
- 3) Solve for y using each chosen value of x .
- 4) List your results in a table.
- 5) Plot the points on a plane.
- 6) Connect the dots!

I should write this down!



Use a table of values to graph the equation.

x	$y = \frac{4}{3}x + 2$	y
-3	$y = \frac{4}{3}(-3) + 2$ $y = -4 + 2$	-2
0	$y = \frac{4}{3}(0) + 2$ $y = 0 + 2$	2
3	$y = \frac{4}{3}(3) + 2$ $y = 4 + 2$	6



I should write this down!