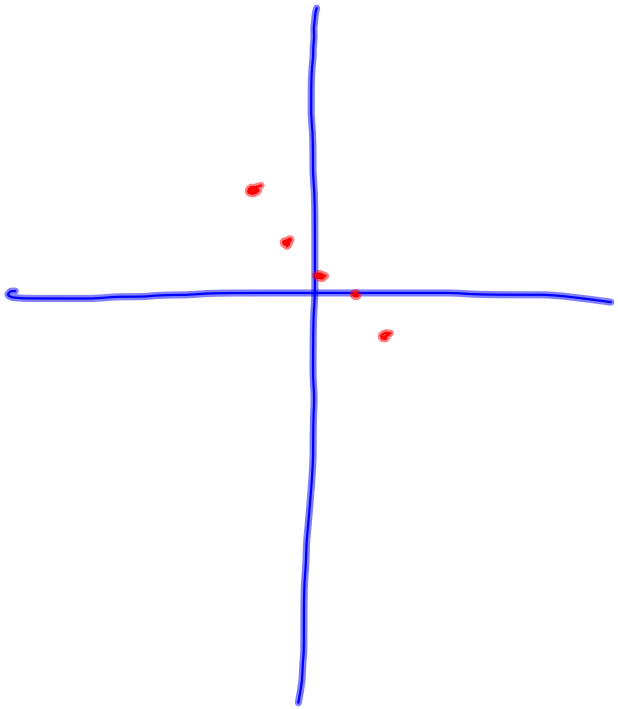
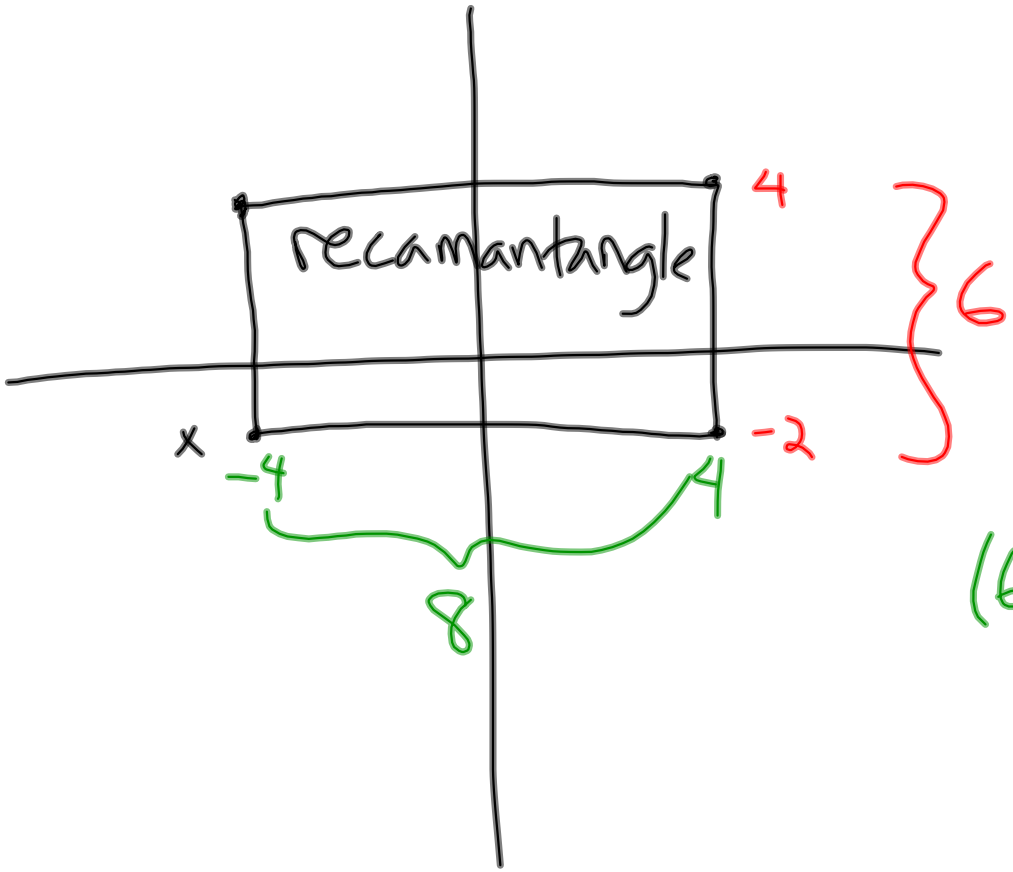
Homework Review - 4.1

$y = -x + 1$

24



x	y
−2	3
−1	2
0	1
1	0
2	−1



Area = l x w

= 6 x 8

= 48

p = 28

(6 + 8 + 6 + 8)

Equations in Two Variables

$2(x-2)+4x=6x-2+4x$

$2y+2(x+4)=3x(y+2)$

Have two variables

Check for solutions (ordered pairs)

Put the ordered pair in for x, y

x y

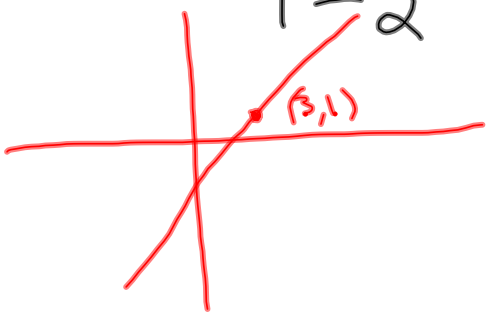
$(3,-2)$

$2y=3x-7$

$2(-2)=3(3)-7$

$-4=2$

NOT a solution



Can be graphed (lots of possibilities)

$(3,1)$ is a solution

$2(1)=3(3)-7$

$2=2$

Linear Equations

Standard form → Graphs make a line

Slope-intercept form

$y = \frac{1}{2}x + \frac{-3}{2}$

$Ax + By = C$

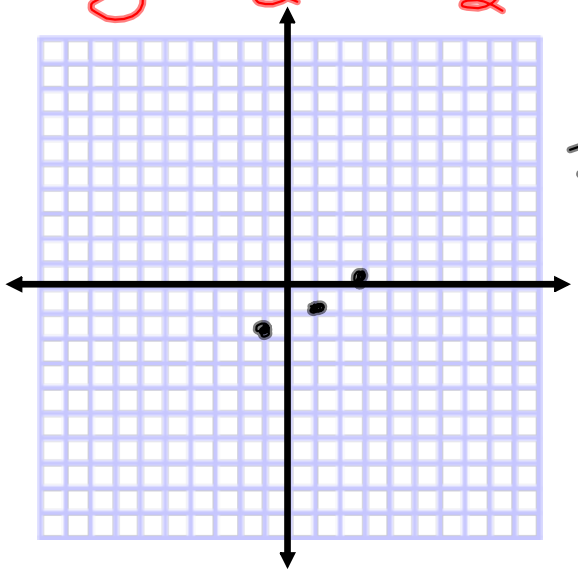
$y = mx + b$

$2x - 4y = 6$

$-2x \quad -2x$

$\frac{-4y}{-4} = \frac{+2x}{+4} + \frac{+6}{-4}$

$y = \frac{1}{2}x + \frac{-3}{2}$



$\frac{1}{2}(1) + \frac{-3}{2}$

$\frac{1}{2} + \frac{-3}{2}$

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

$\frac{1}{2} \cdot 3 + \frac{-3}{2}$

$\frac{3}{2} + \frac{-3}{2}$

0

Make a table and plot

x	y
1	-1
3	0
-1	-2

$\frac{1}{2}(-1) + \frac{-3}{2}$

$\frac{-1}{2} + \frac{-3}{2}$

$\frac{-4}{2}$

-2

$$\begin{array}{r} 6 \\ -2x \\ \hline 6+-2x \end{array}$$

$-2x+6$

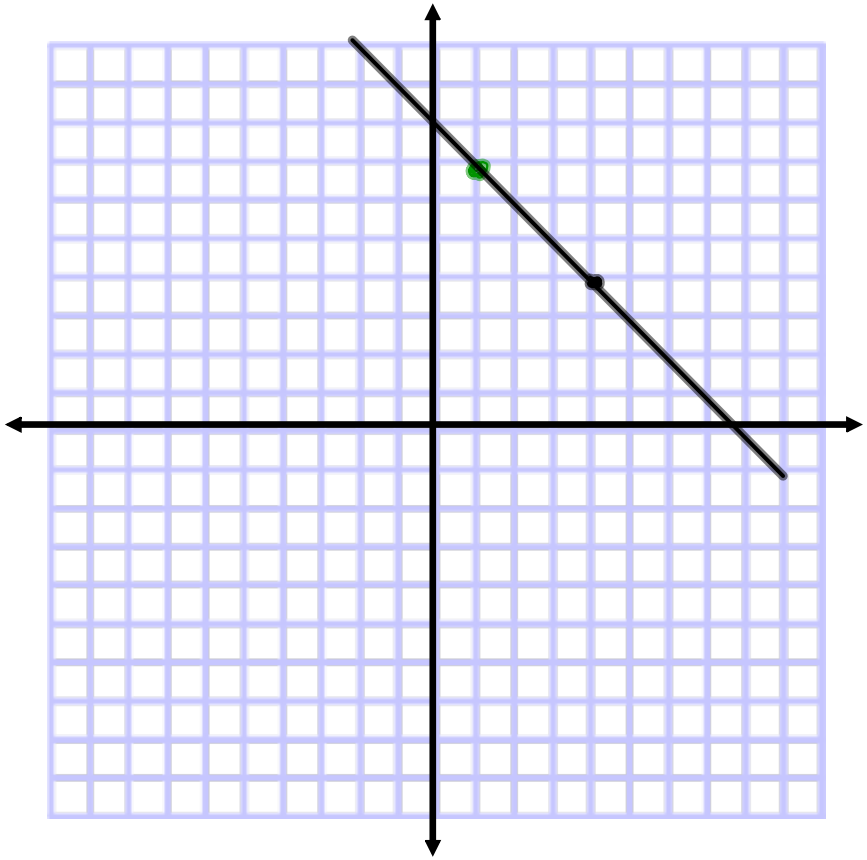
$3+8=8+3$

Steps for Graphing:

$y = -x + 8$

$y - 8 = -x$

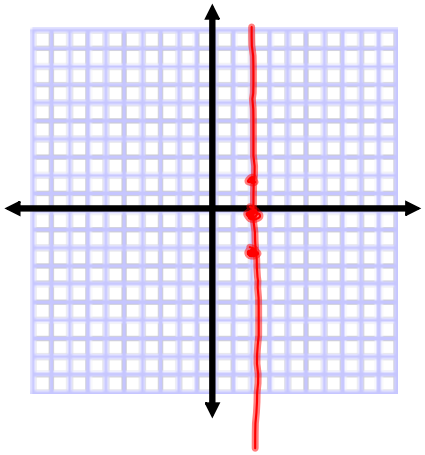
$+8 \quad +8$



1. Solve the equation for y
2. Make a table of x and y values
3. Pick two random x values and solve for y
4. Graph the coordinates on a plane
5. Connect the points with a line

x	y
1	7
2	6
4	4

Horizontal and Vertical Lines



x	y
2	-2
2	0
2	2

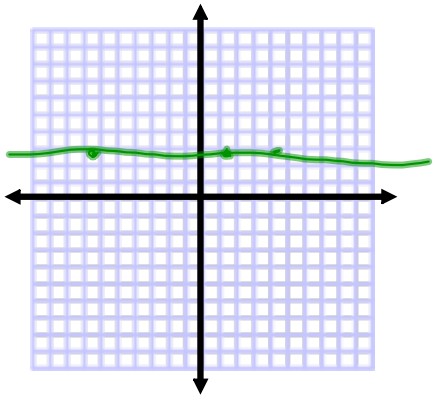
$\frac{2x}{2} = \frac{4}{2}$

$x = 2$

$x = a$

vertical line

x	y
1	3
200	3
-1.2869	3



$y = b$

horizontal line

$\frac{3y}{3} = \frac{9}{3}$

$y = 3$

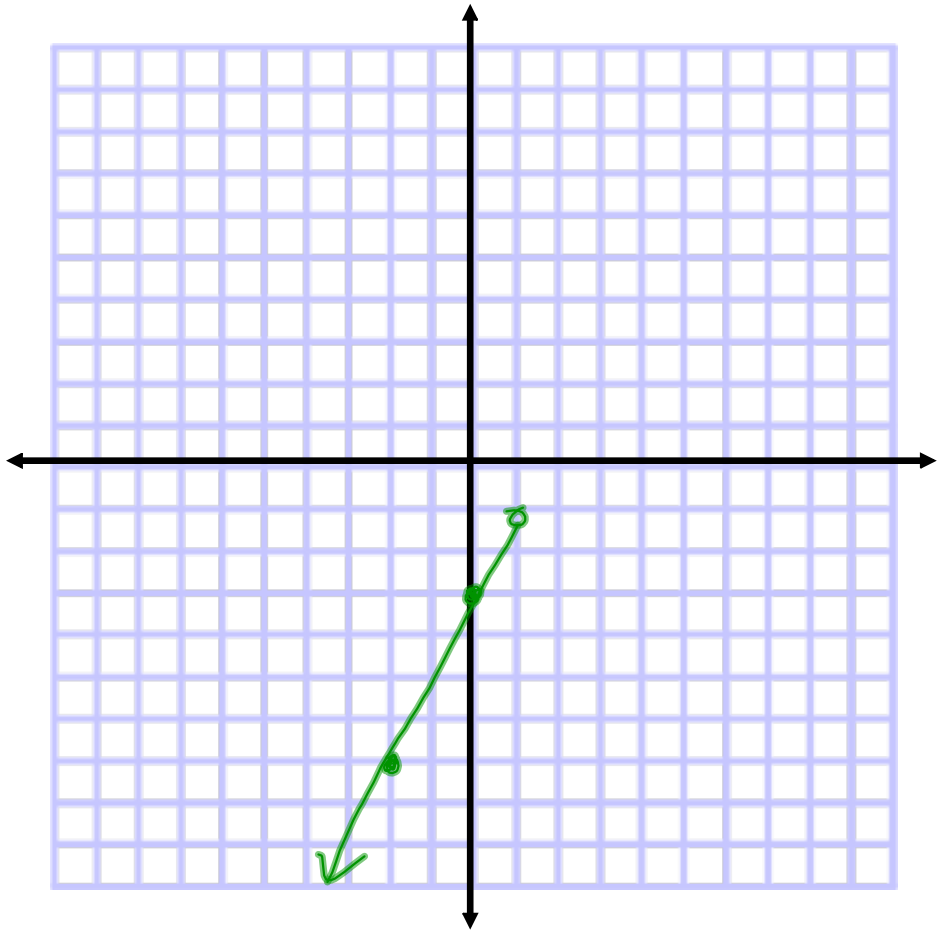
$6x - 3y = 9$; domain: $x < 1$

$-6x \quad -6x$

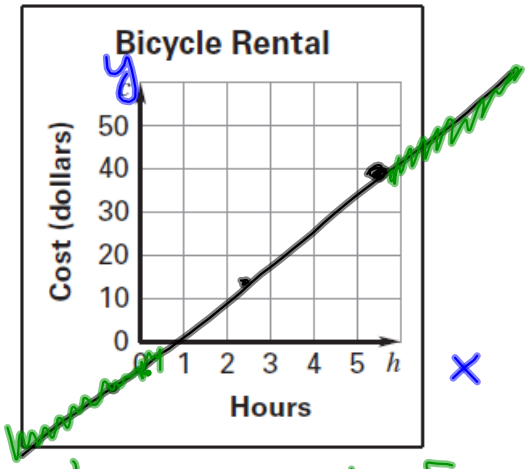
$\frac{-3y}{-3} = \frac{-6x}{-3} + \frac{9}{-3}$

$y = 2x + -3$

x	y
[illegible]	
0	-3
-2	-7



Bicycle Rental A bicycle rental shop rents bicycles for $8 per hour. The total cost c (in dollars) for renting a bicycle h hours is given by the function $c = 8h$. Once you get to the rental shop, you figure you can rent a bicycle for at most 5 hours. Graph the function and identify its domain and range. What is the most that you will pay for renting the bicycle?



(1) Write the information you know (numbers and words)
- cost is 8/hr
- max is 5 hrs

(2) What's the variable? (letter and words)
- h = hours
- c = cost

(3) Set up and solve the resulting equation

$c = 8 \cdot h$

$c = 8 \cdot 5$

$c = 40$

$y = 8x$

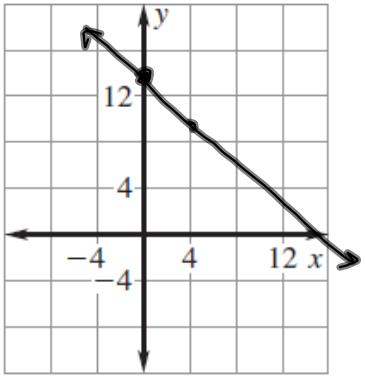
domain: $0 \le h \le 5$

range: $0 \le c \le 40$

h	c
2	16
1	8
5	40

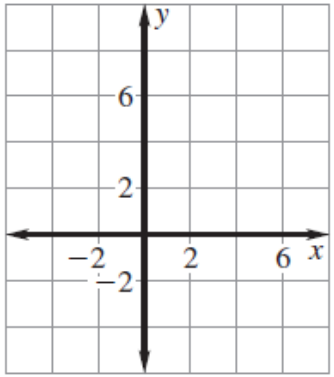
10. $y + x = 14$ $y = -x + 14$

$-x \quad -x$



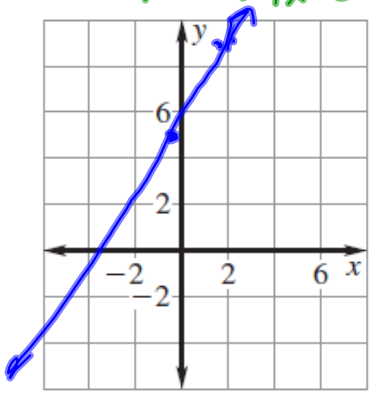
x	y
0	14
4	10

11. $y - 5x = 2$



12. $2y - 4x = 10$ $\frac{2y}{2} = \frac{4x+10}{2}$ $y = 2x + 5$

$+4x \quad +1$



x	y
0	5
2	9

Homework:

p. 219; 4-16 by 4, 26, 36, 38