4.3: Graph a Line Using x and y intercepts

Goals *Identify *x* and *y* intercepts by looking at a graph *Identify x and y intercepts from an equation *Graph a line using *x* and *y* intercepts *Interpret meaning of *x* and *y* intercepts



<u>*x* – intercept</u>:

<u>y – intercept</u>:

Identify the *x* **and** *y* **intercepts from the graphs:**



<u>y-intercept</u>:



- 1. Find the x intercept by letting _____. (since we noticed this is true for all x – intercepts)
- **2.** Solve for *x*. (____, 0)
- 3. Graph the x intercept you just found. Since you know this

is the point where the line hits the _____, your only options

for graphing are to move _____ or _____.

- 4. Find the y intercept by letting ______ in the original equation. (since we noticed this is true for all y intercepts)
- 5. Solve for *y*. (0, ____)
- 6. Graph the y intercept you just found. Since you know

this is the point where the line hits the _____,

your only options are to move _____ or _____.



Ex: 2x + 5y = 10

7. Connect with a ruler.

Find the x and y intercepts of each equation and then graph the equation:

Ex:
$$3x + 2y = 6$$

Ex:
$$4x - 2y = 10$$





Ex: -3x + 5y = -15

Ex: x + 2y = 4

| | | У | | |
|----|------|---|---|---|
| | -3 | | | - |
| | -1 | | | - |
| -3 | -1-1 | 1 | 3 | x |
| | | | | - |
| | | | | |

| | у | | |
|-------|---|---|----------|
| | | | |
| | | | |
| | | _ | |
| -3 -1 | 1 | 3 | X |
| | 1 | 3 | <i>x</i> |

Ex: You are helping plan an awards banquet for your school and you need to rent tables to seat 180 people. Tables come in two sizes; small tables seat 4 people and large tables seat 6 people.

Let x = the number of small tables and

y = the number of large tables

- a) Write an equation to represent the situation
- b) Find the *x* and *y* intercepts and graph the equation.
- c) What do the intercepts mean in terms of the types of tables you are using to seat everyone?
- d) Identify four possible combinations of small and large tables that could be used.



Ex: You are making and selling decorative bows. You sell small bows for \$3 and large bows for \$5. You want to earn \$60 in one week. Write an equation to represent the situation and graph. What are 3 possibilities of combinations of small and large bows you could sell?

