

Name: _____

Date: _____

Notes

Algebra Section 4.3

Pages 225-232



Goal: "Identify x and y intercepts"

"You will graph linear equations using intercepts"

Vocabulary

x intercept: The x coordinate of a point where the line crosses the x axis.

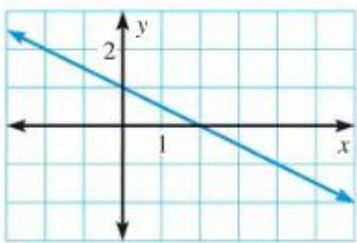
y intercept: The y coordinate of a point where the line crosses the y axis.

Finding the x and y intercepts on a graph.

Example:

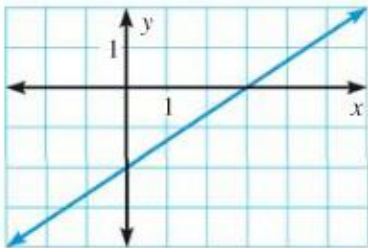
x intercept: 2

y intercept: 1



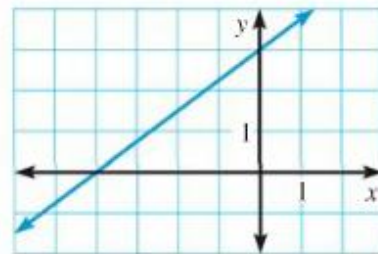
Try These:

1)



x -intercept: 3
 y -intercept: -2

2)



x -intercept: -4
 y -intercept: 3

Finding the x intercept:

$$7y + x = 14$$

Plug 0 in for y . $y=0$

$$x = 14$$

Coordinate: (14, 0)

Finding the y intercept:

$$7y + x = 14$$

Plug 0 in for x . $x=0$

$$y = 2$$

Coordinate: (0, 2)

Using intercepts to graph an equation:

Example: Graph the equation $y = 4x - 4$

Step 1: Find the intercepts

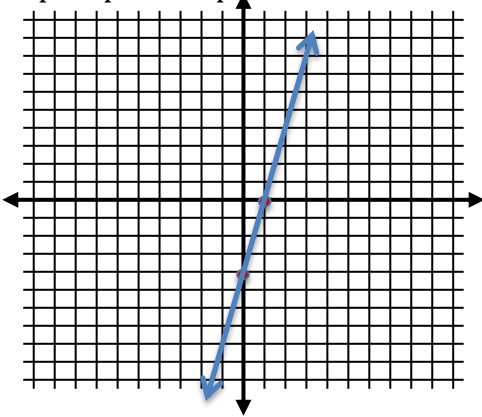
x intercept: $(1,0)$

y intercept: $(0,-4)$

Coordinate:

Coordinate:

Step 2: plot the points and draw a line through the points



x-intercept: 1

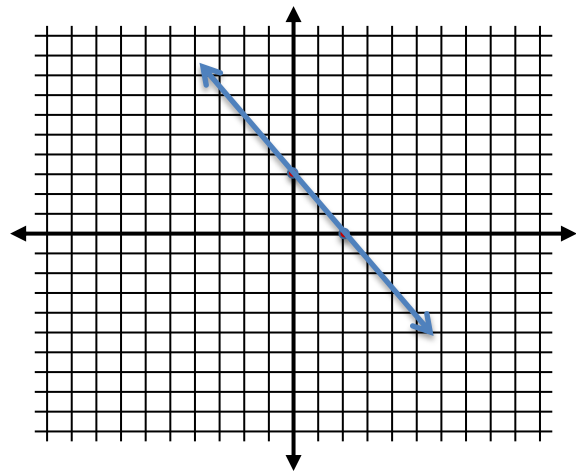
y-intercept: -4

Graph these using x and y intercepts:

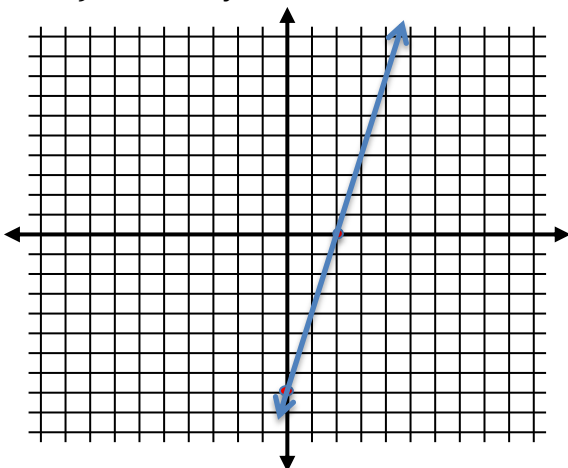
1) $2x + 4 = y$



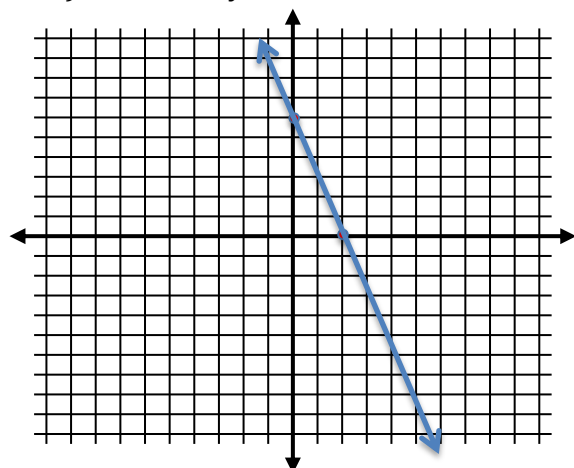
2) $3x + 2y = 6$



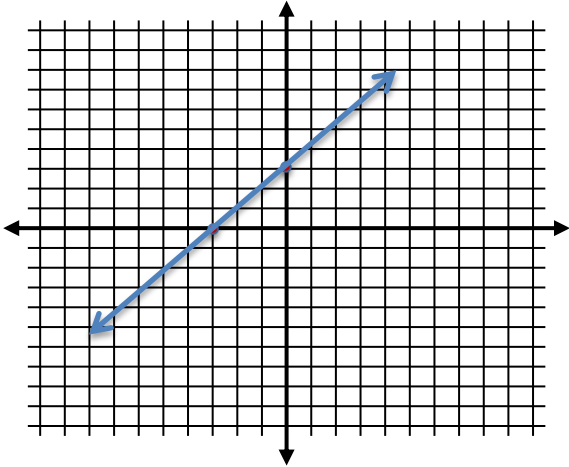
3) $4x - 8 = y$



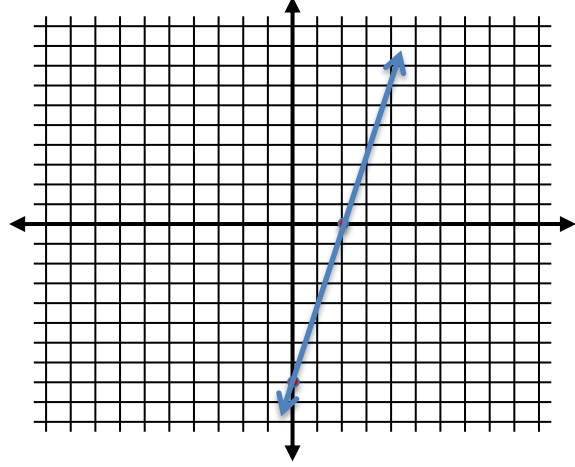
4) $-3x + 6 = y$



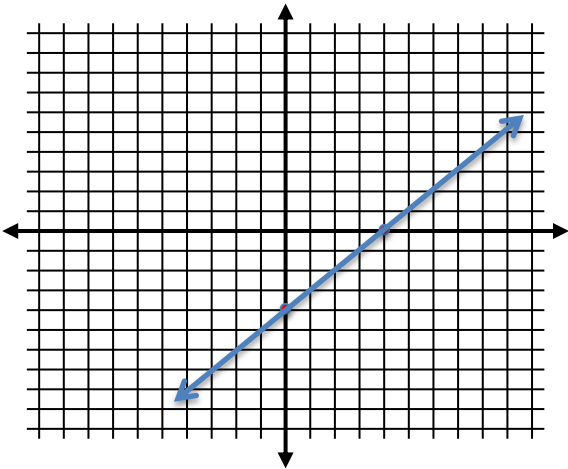
5) $x + 3 = y$



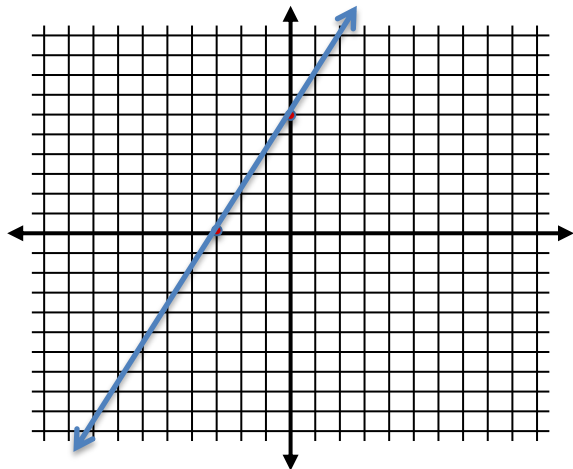
6) $4x - 8 = y$



7) $y = x - 4$



8) $y = 2x + 6$



Word Problems:

1) 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.

a) Let x equal the number of small tables and y equal the number of large tables. Write an equation to represent the situation.

$4x + 6y = 180$

b) Graph the equation.

x -intercept: 45

y -intercept: 30

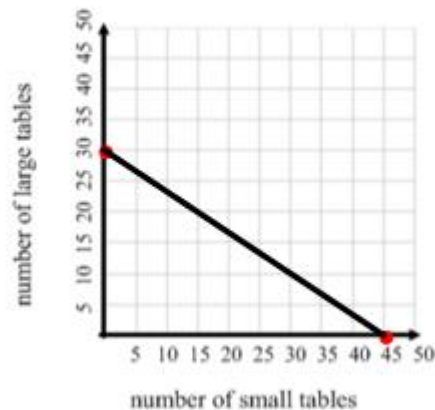
c) Give 4 possible combinations of small and large tables you could use.

30 large, 0 small

45 small, 0 large

30 small, 10 large

15 small, 20 large



2) You make and sell decorative bows. You sell small bows for \$3 and large bows for \$5. You want to earn \$60.

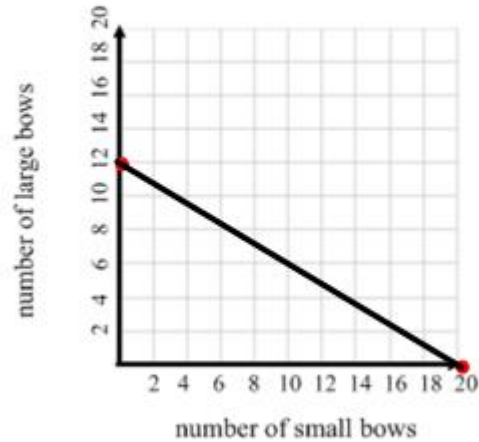
Write an equation to represent the situation.

$$3x + 5y = 60$$

Graph your equation.

x-intercept: 20

y-intercept: 12



Give two possible combinations of small and large bows you could sell.

10 small, 6 large

20 small, 0 large

0 small, 12 large

3) You are making a necklace with red beads and blue beads. Each red bead costs \$2 and each blue bead costs \$3. You have a total of \$72 dollars to spend.

x is the number of Blue Beads

y is the number of Red Beads

Write an equation to represent the situation.

$$3x + 2y = 72$$

Graph your equation.

x-intercept: 24

y-intercept: 36

Give two possible combinations of red beads and blue beads you can buy to make your necklace.

Possible solutions:

0 blue 36 red

0 red 24 blue

10 blue 21 red

2 blue 33 red

