



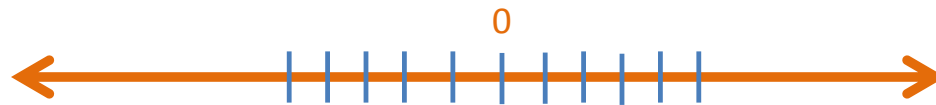
DAYTONA
STATE COLLEGE

GRAPHING LINEAR EQUATIONS

THE RECTANGULAR COORDINATE SYSTEM

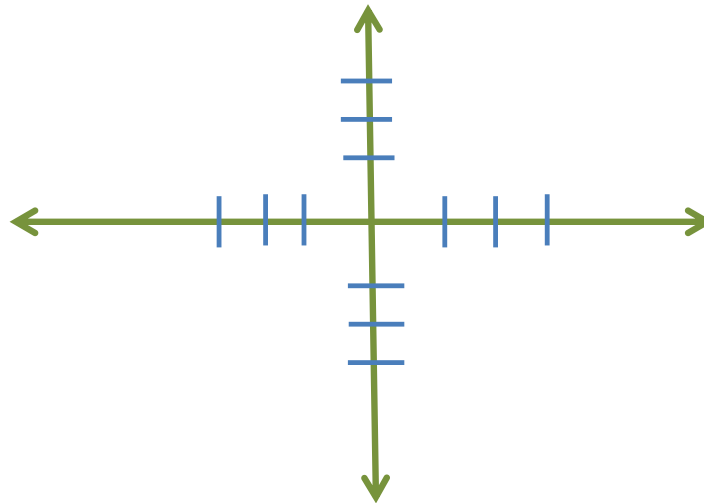
Rectangular Coordinate System

Graphing on a line



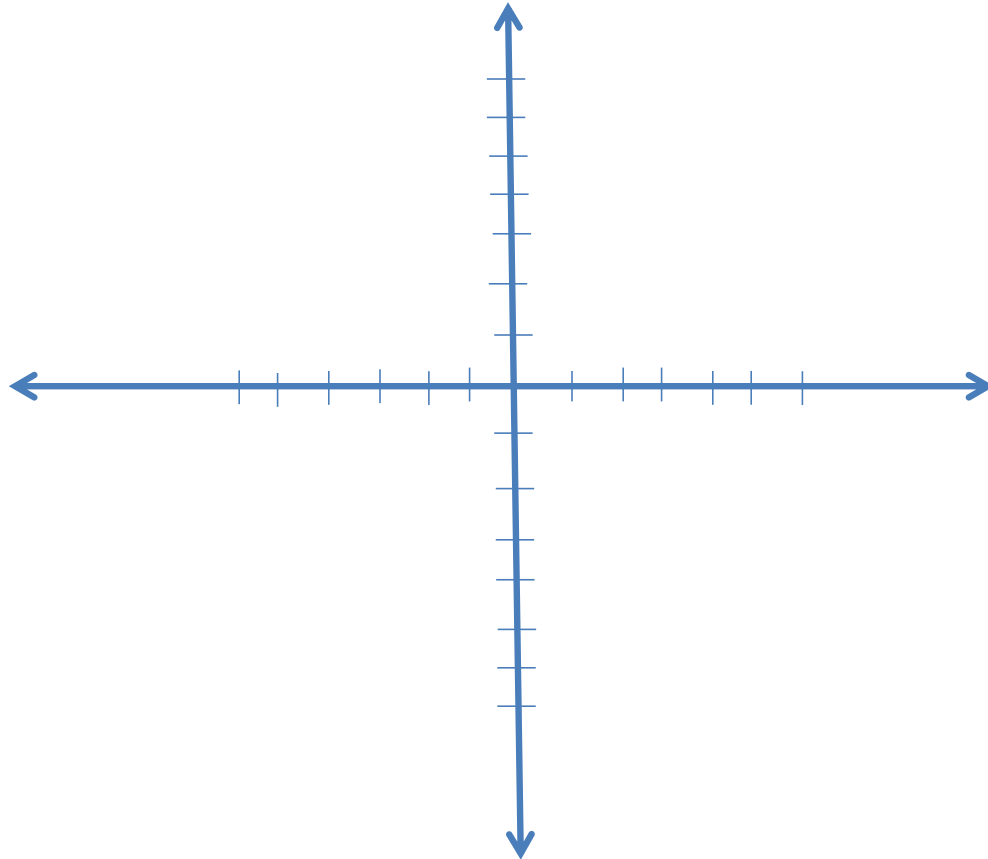
vs.

Graphing on a coordinate plane



Rectangular Coordinate System

origin
x-axis
y-axis
quadrant
ordered pair
horizontal
vertical
slope



Rectangular Coordinate System

Plot the points

$(3, 5)$

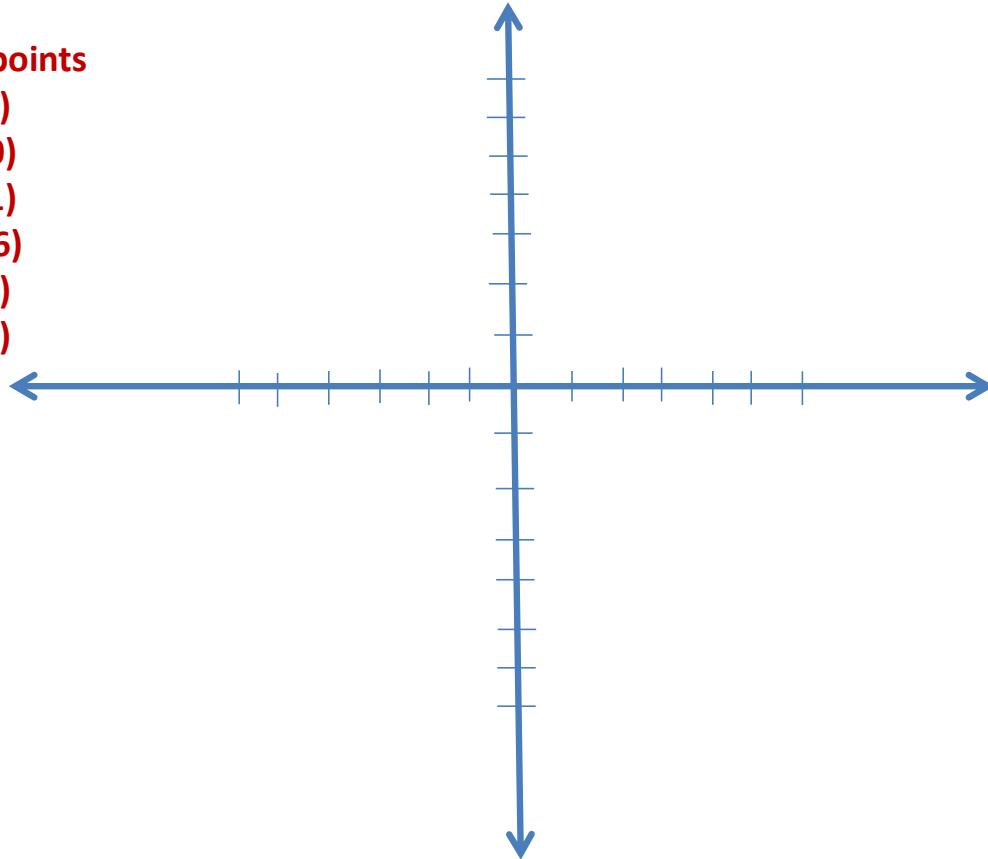
$(-4, 0)$

$(2, -1)$

$(-5, -6)$

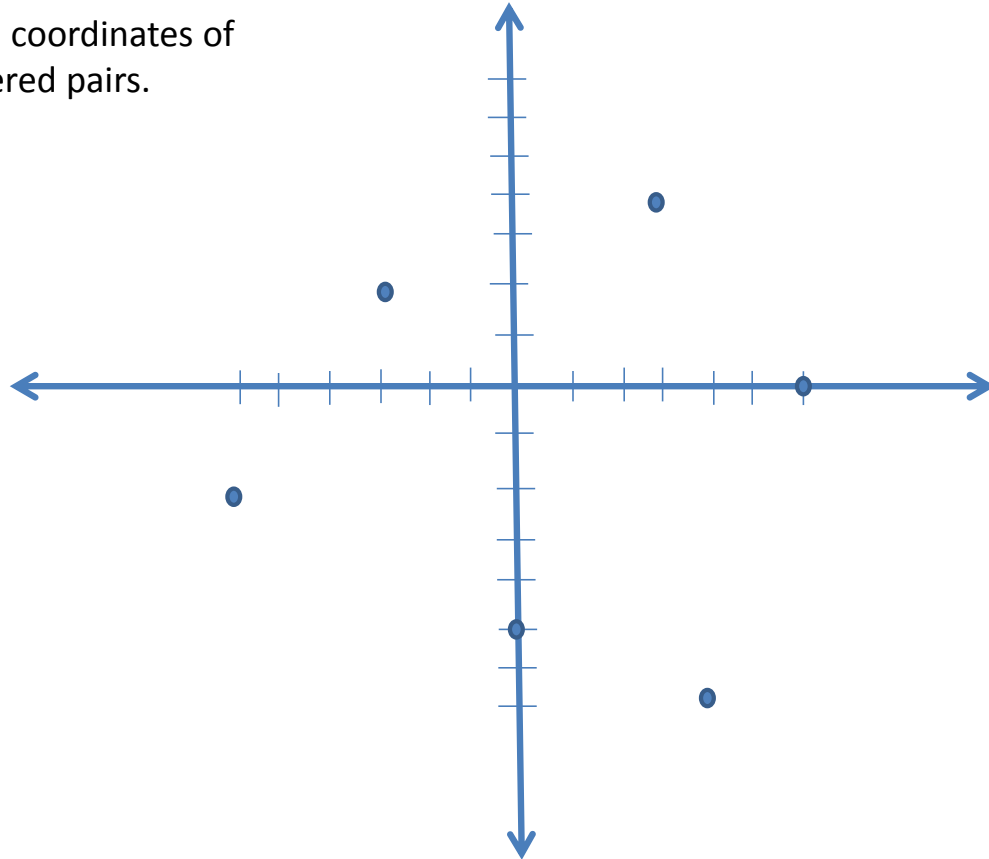
$(0, 3)$

$(4, 4)$



Rectangular Coordinate System

Give the coordinates of the ordered pairs.



Linear Equations in Two Variables

Determine if the ordered pair is a solution to the linear equation.

$$2x - 3y = 9$$

$$(0, -3)$$

$$(-6, 1)$$

$$(1, -\frac{7}{3})$$

$$x = 2y + 5$$

$$(3, 12)$$

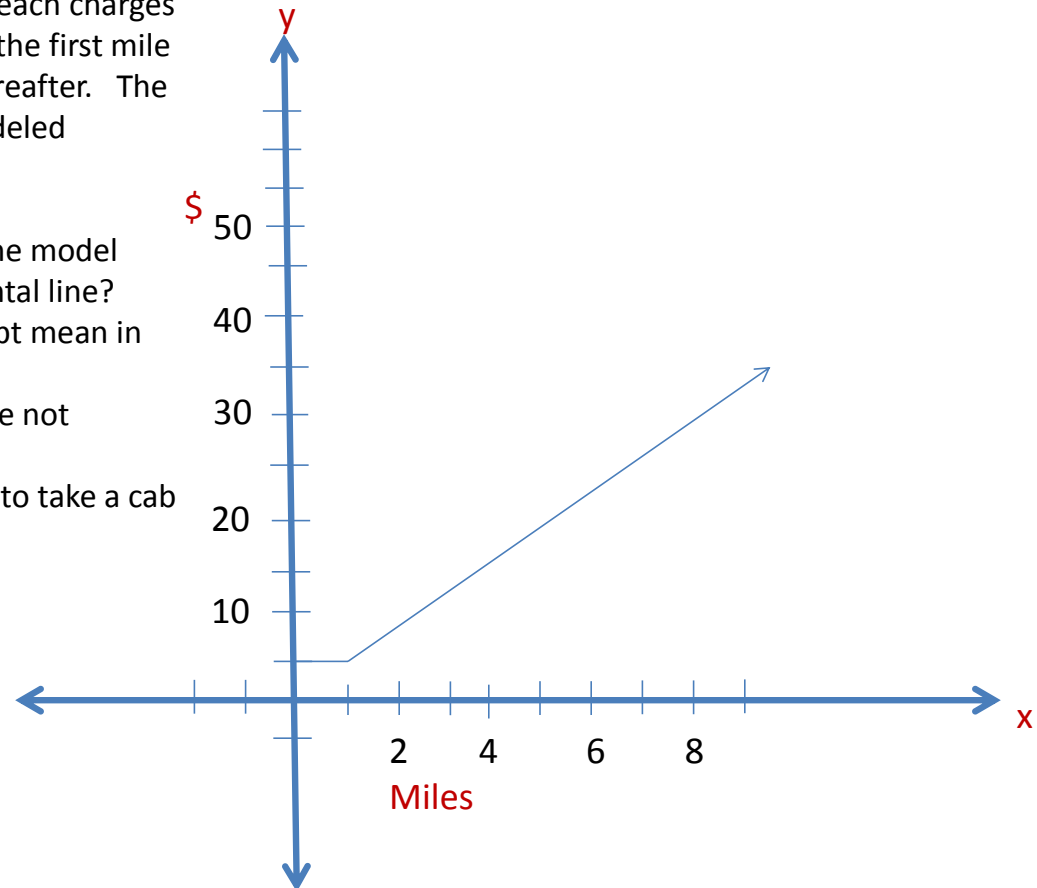
$$(\frac{1}{2}, 6)$$

$$(0, -\frac{5}{2})$$

Interpreting a Graph

A taxi company in Daytona Beach charges \$5.00 for any distance up to the first mile and \$3.00 for every mile thereafter. The cost of a cab ride can be modeled graphically.

1. Why is the first part of the model represented by a horizontal line?
2. What does the y-intercept mean in this problem?
3. Why is the rest of the line not horizontal?
4. How much would it cost to take a cab 7.5 miles?



Graphing Linear Equations

Making a Table of Values

x	y
-1	
1	
2	

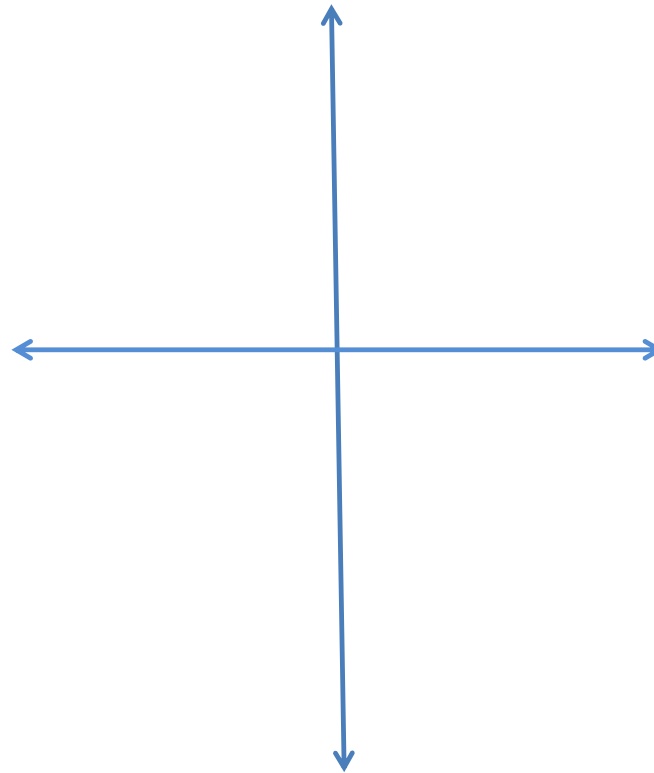
$$4x - y = 6$$

Graphing Linear Equations

Making a Table of Values

$$3x + 2y = 6$$

x	y

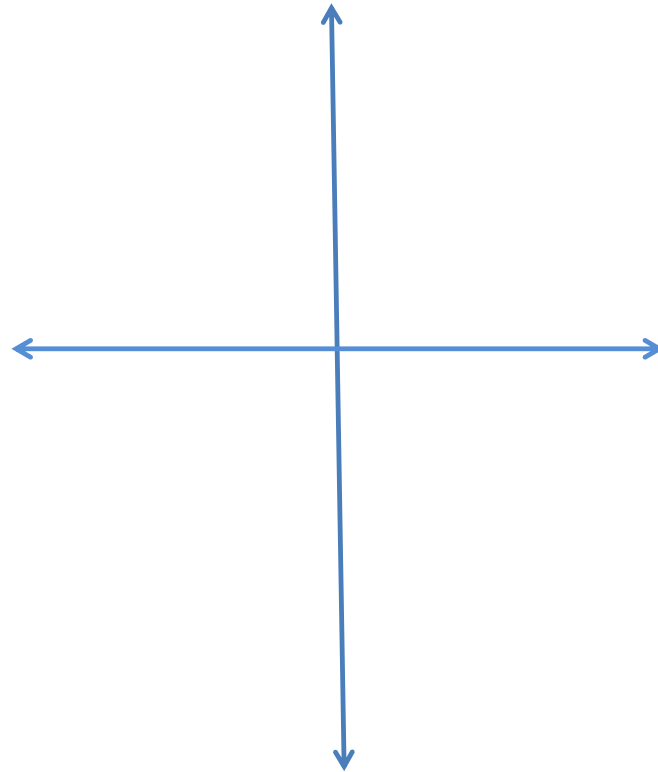


Graphing Linear Equations

Making a Table of Values

$$-2y = 6$$

x	y

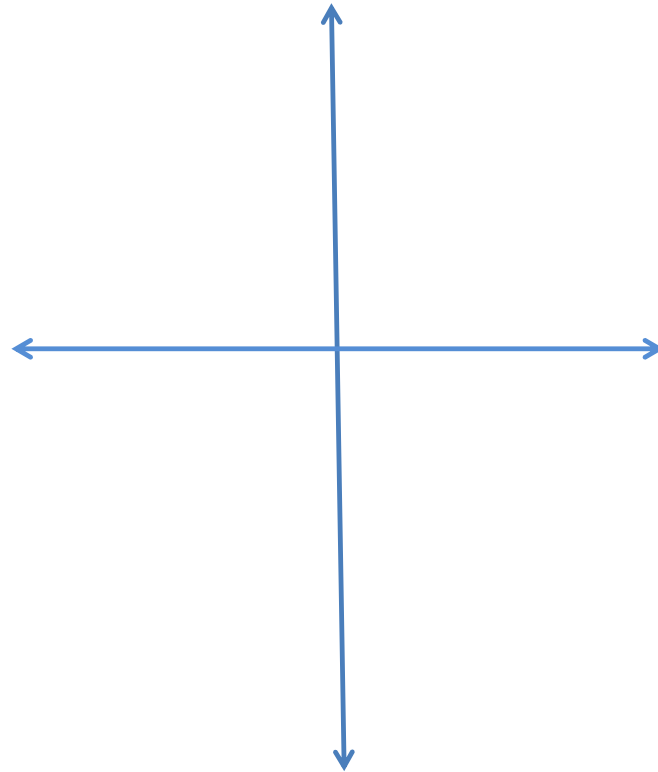


Graphing Linear Equations

Making a Table of Values

$$5x = -15$$

x	y

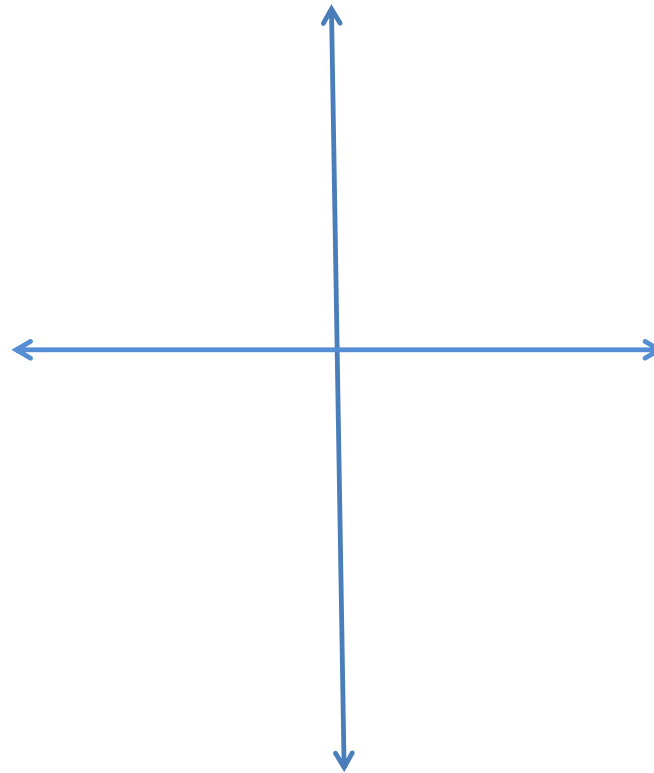


Graphing Linear Equations

Making a Table of Values

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

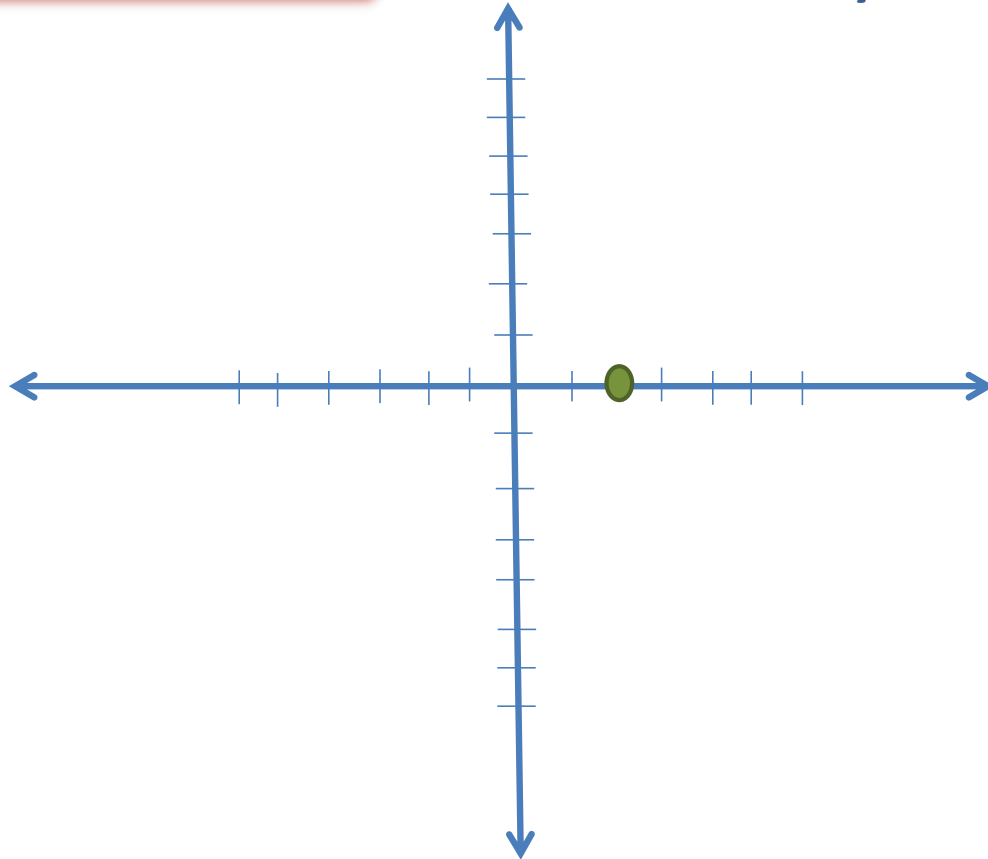
x	y



Finding the y-intercept

Replace x in the equation
with zero and solve for y

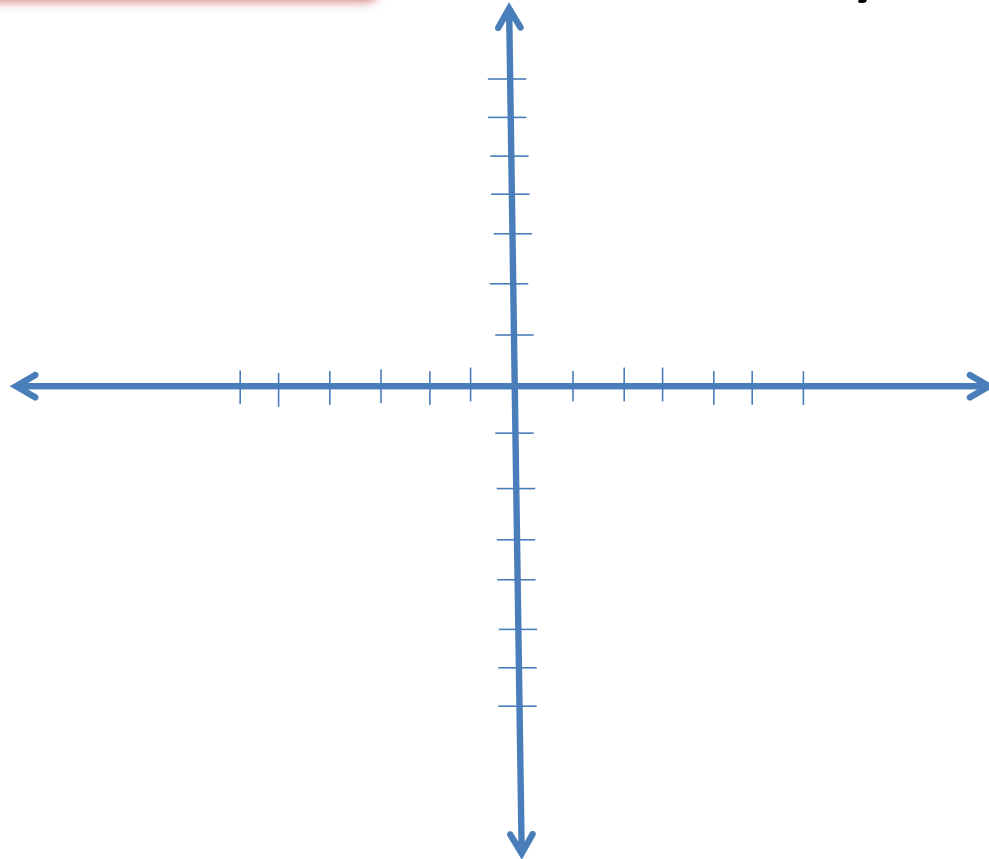
$$-2x - y = -4$$



Finding the x-intercept

Replace y in the equation with zero and solve for x

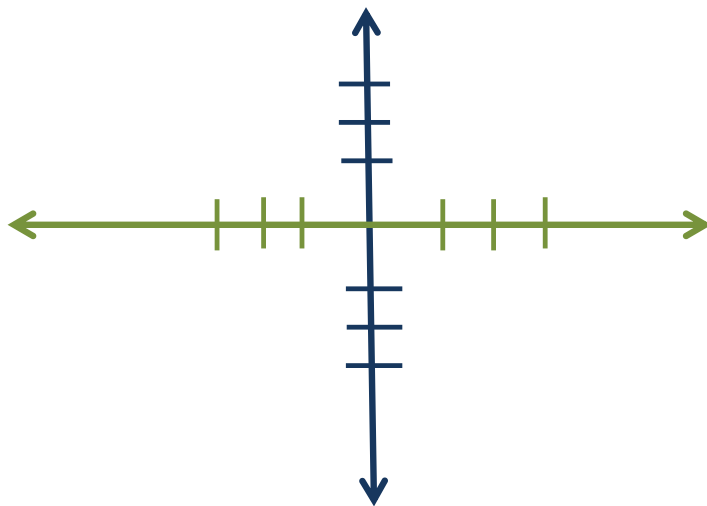
$$-2x - y = -4$$



Graphing using x and y intercepts

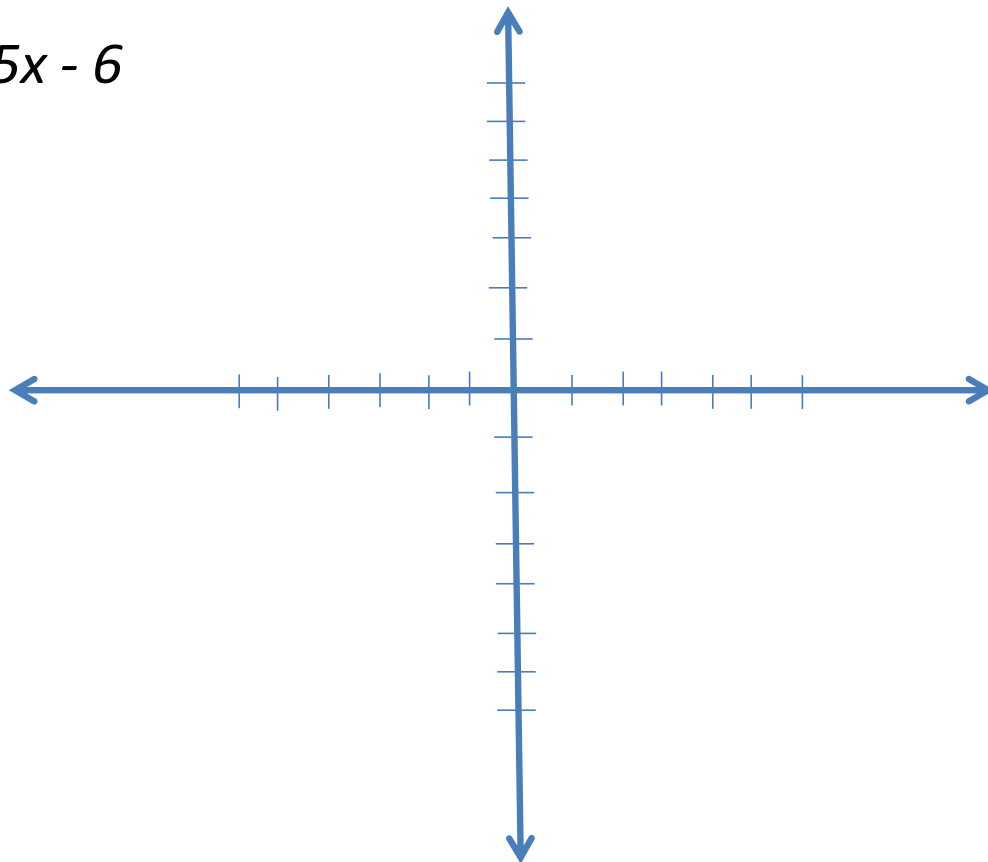
x – intercept () on the x axis

y – intercept () on the y axis



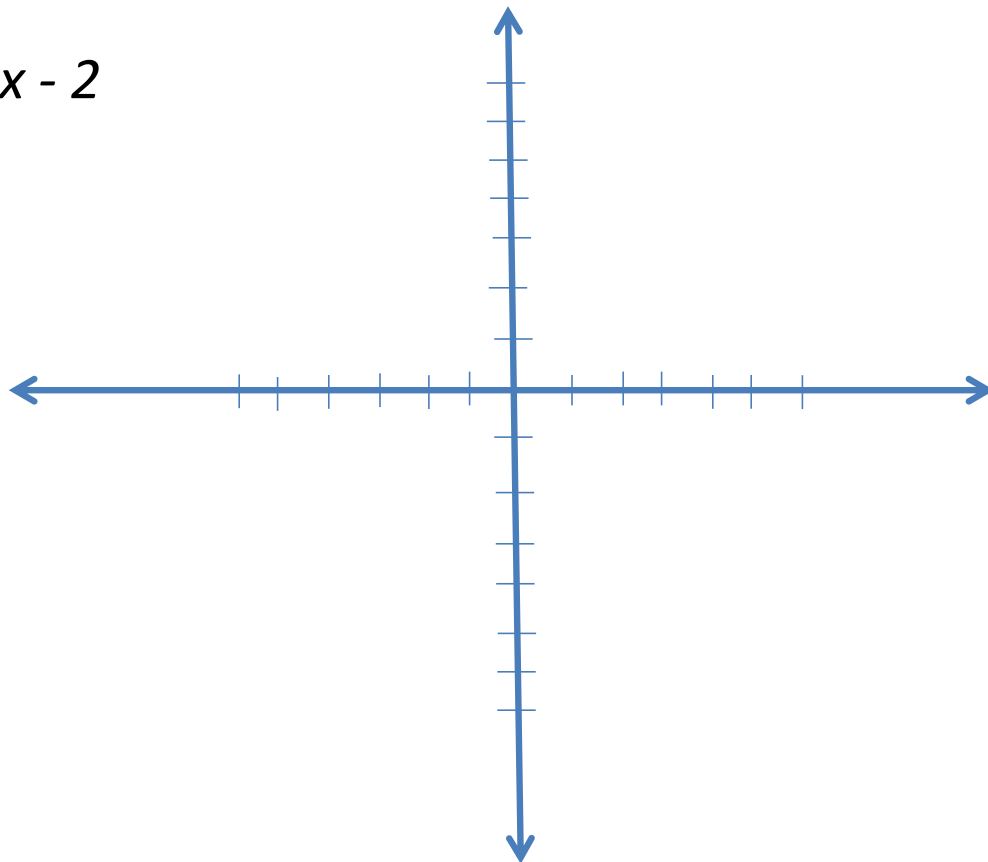
Graph using intercepts

$$3y = -5x - 6$$



Graph using intercepts

$$y = -\frac{2}{5}x - 2$$



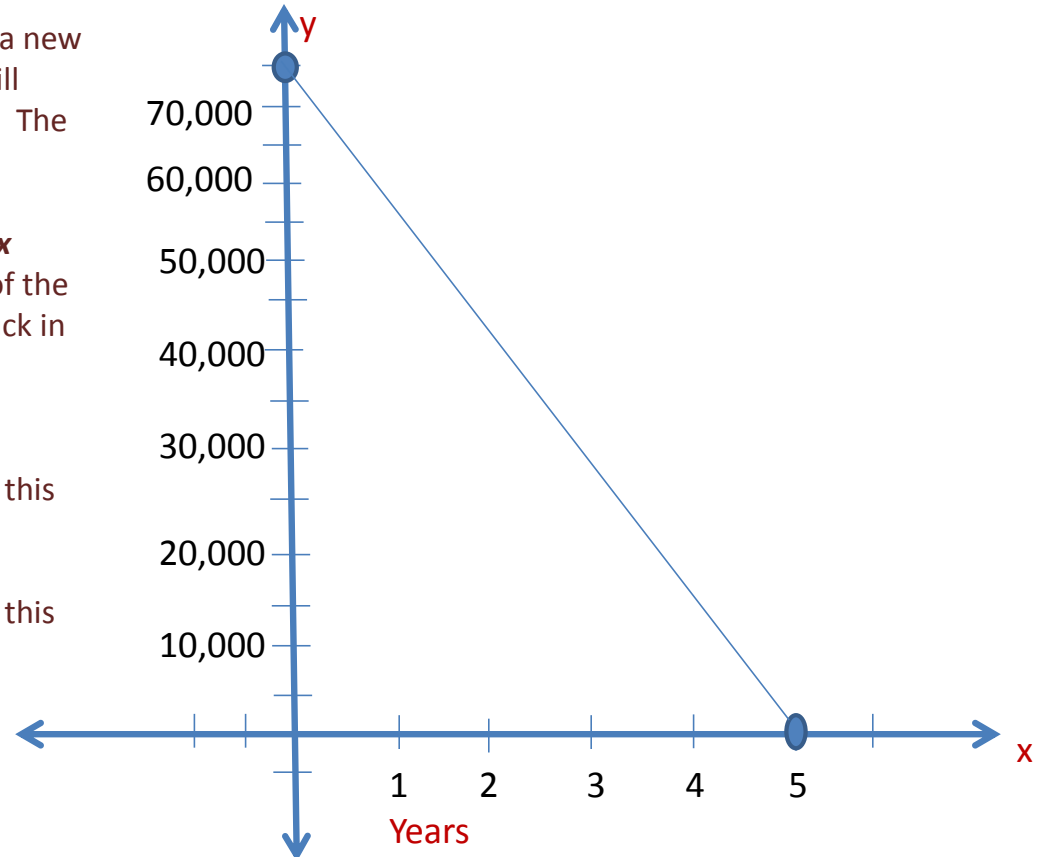
Interpreting the x and y intercepts

A trucking company purchases a new truck for \$75,000. The truck will depreciate at \$15,000 per year. The equation that describes the depreciation line is

$$y = 75,000 - 15,000x$$

Where y represents the value of the truck and x is the age of the truck in years.

1. What does the y -intercept represent in the context of this problem?
2. What does the x -intercept represent in the context of this problem?



Graphing Exercise Handout

