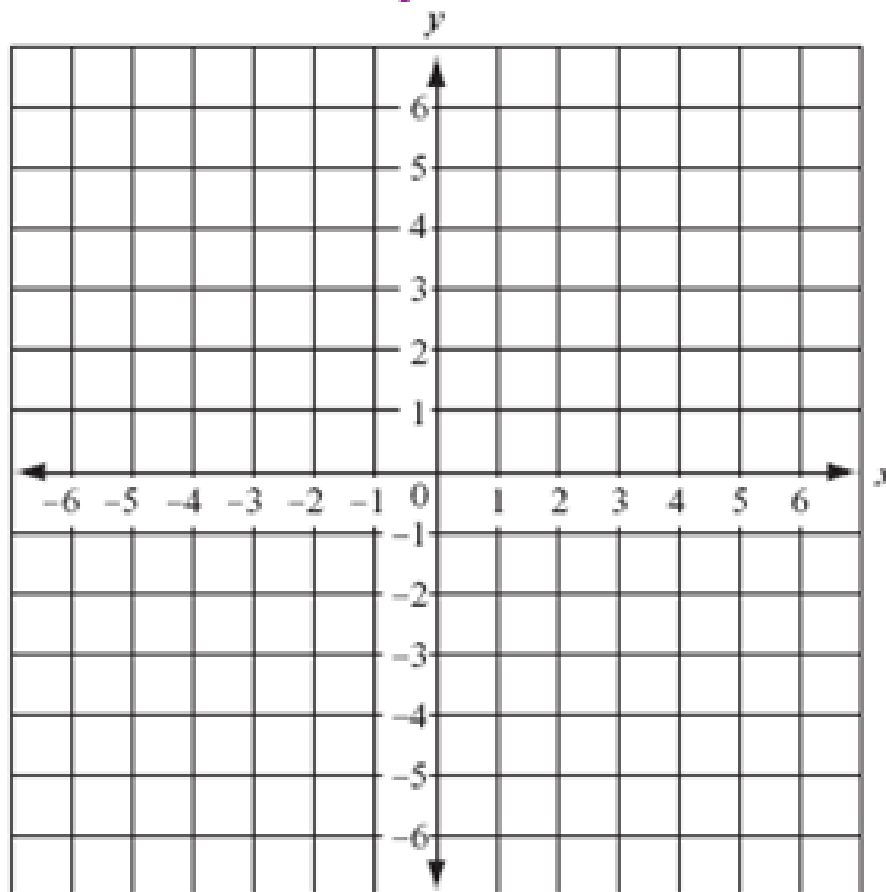


Lesson 2.1: Rectangular Coordinates and Graphs of Equations

By the end of the lesson, you will be able to:

- ~ Plot points in the rectangular coordinate system
- ~ Determine whether an ordered pair is a point on the graph of an equation
- ~ Graph an equation using Point-Plotting Method
- ~ Identify the intercepts from the graph
- ~ Interpret Graphs

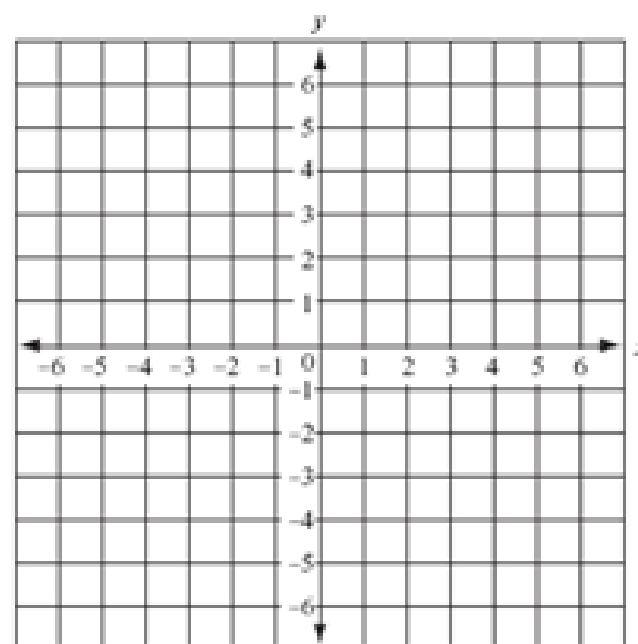
Lesson 2.1: Rectangular Coordinates and Graphs of Equations



Lesson 2.1: Rectangular Coordinates and Graphs of Equations

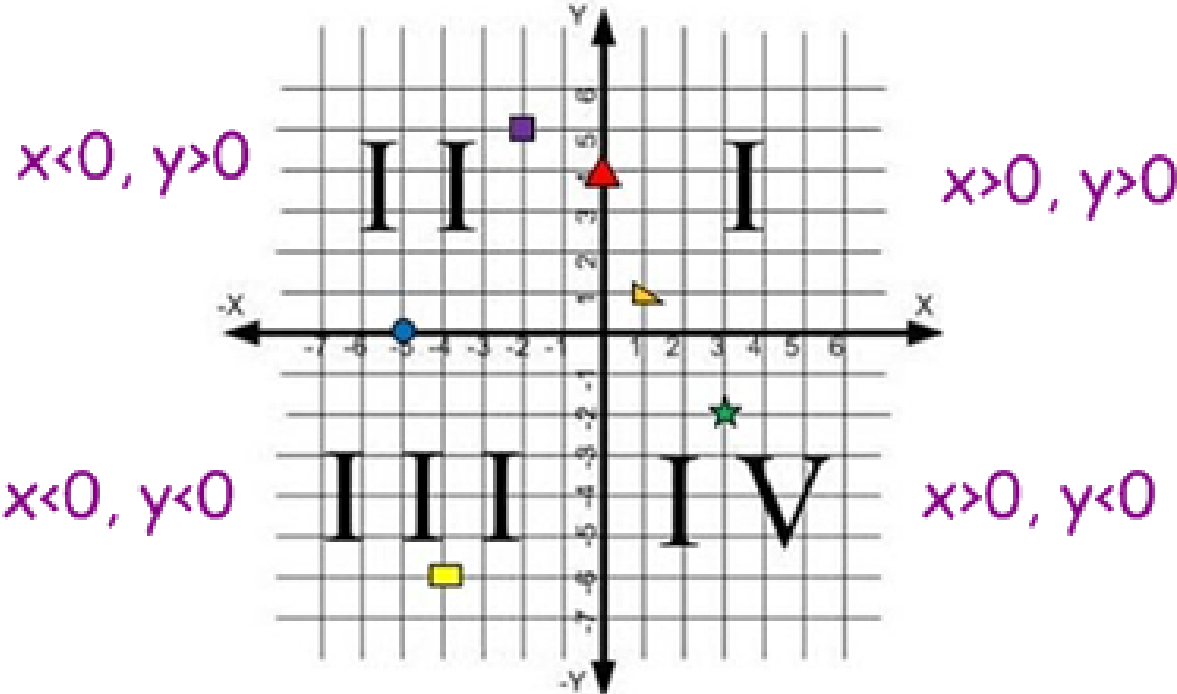
Can you tell me what the origin is?

-Origin is:



Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Quadrants:



Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Example 1: Determine which quadrant the points are in.

a.) $A(3, 2)$

b.) $B(-2, 4)$

c.) $C(-1, -3)$

d.) $D(3, -4)$

e.) $E(-2, 0)$

Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Determine whether an ordered pair is a point on the graph of an equation.

Definition: The graph of an equation in two variables, x and y , is the set of all ordered pairs (x, y) in the xy -plane that satisfy the equation.

So, we need to plug points into the equation to determine whether they are on the graph or not. If the point makes the equation true, then it is on the graph.

Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Determine whether an ordered pair is a point on the graph of an equation.

Example 2: $3x - y = 6$

a.) $(2, 0)$

b.) $(1, -2)$

c.) $(1/2, -9/2)$

Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Determine whether an ordered pair is a point on the graph of an equation.

Example 3: $y = x^2 + 3$

a.) (1, 4)

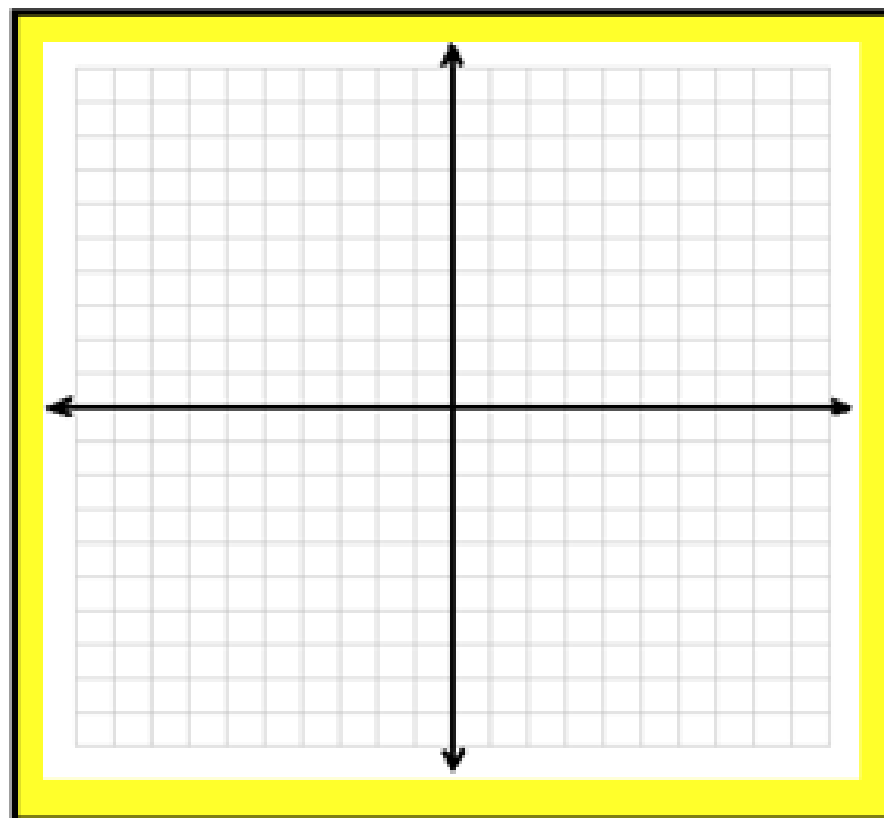
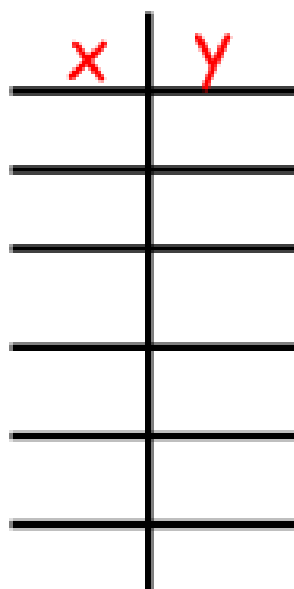
b.) (-2, -1)

c.) (-3, 12)

Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Graph an equation by plotting points.

Example 4: $y = x^2$

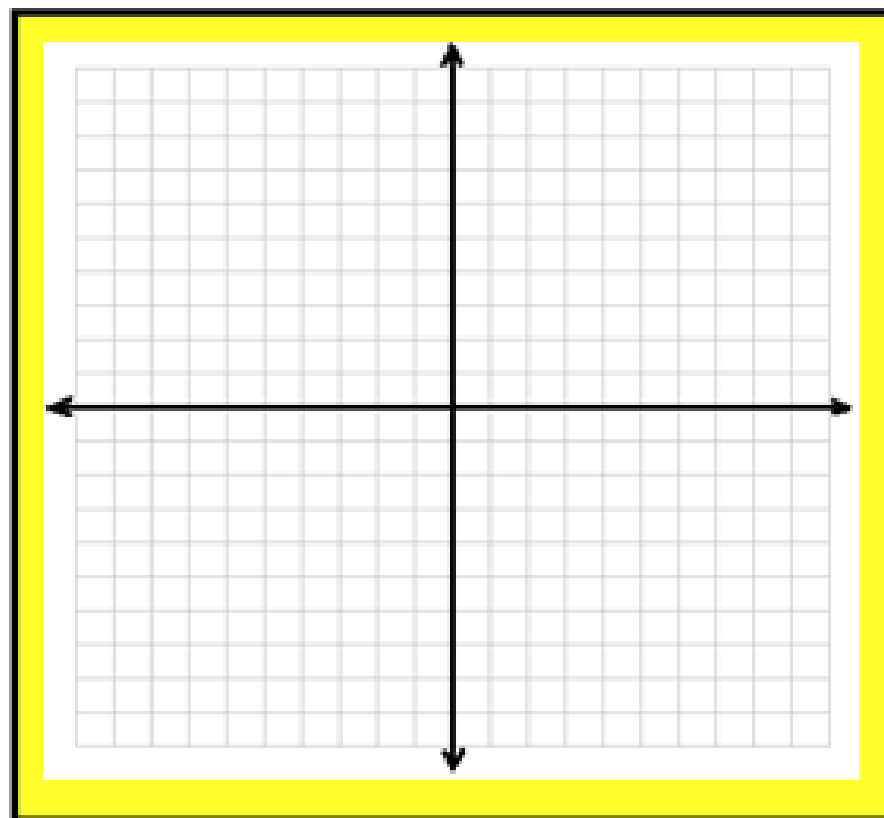


Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Graph an equation by plotting points.

Example 5: $y = \sqrt{x}$

x	y



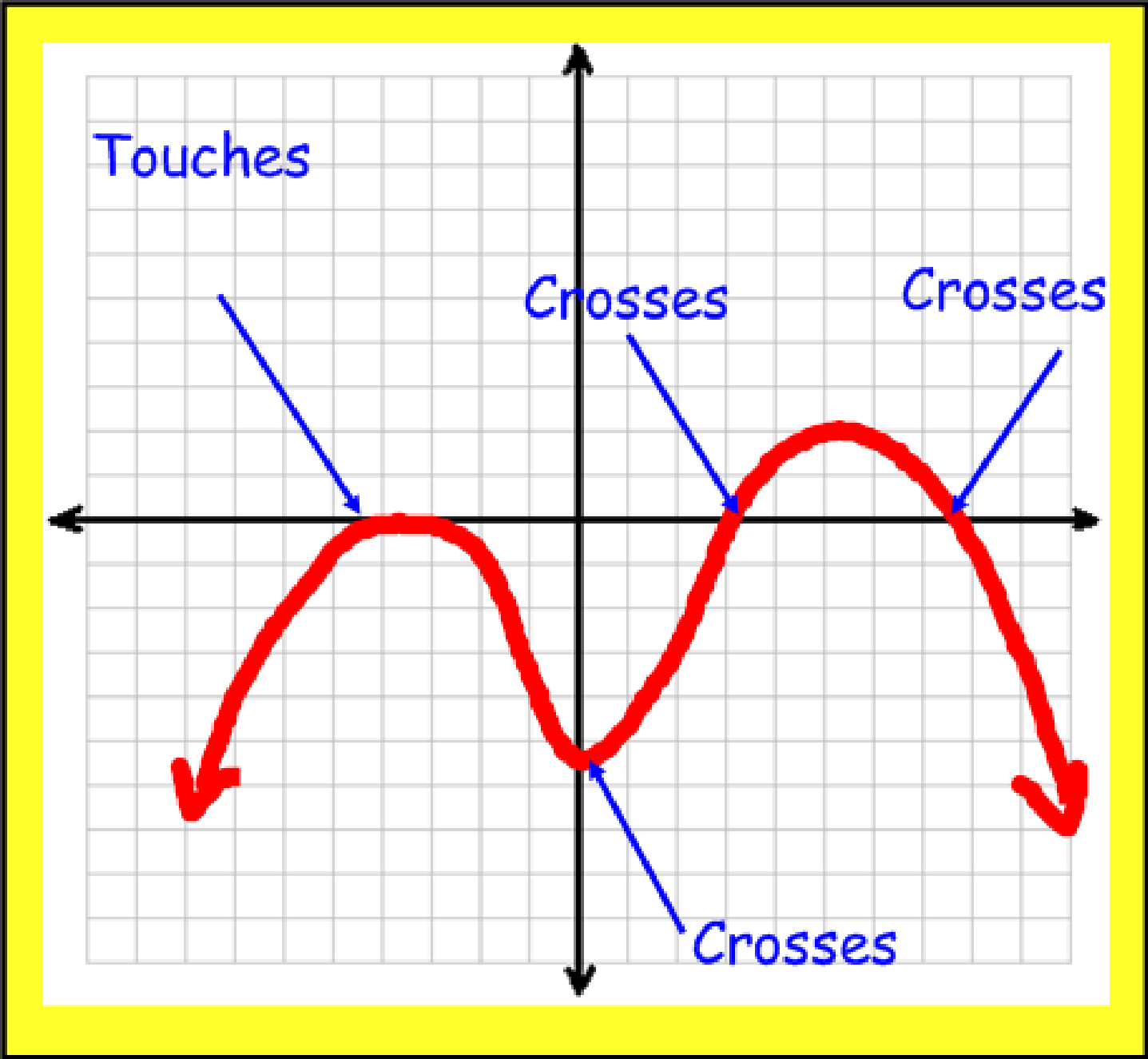
Identifying Intercepts

Intercepts are the points, if any, where a graph crosses or touches the coordinate axes.

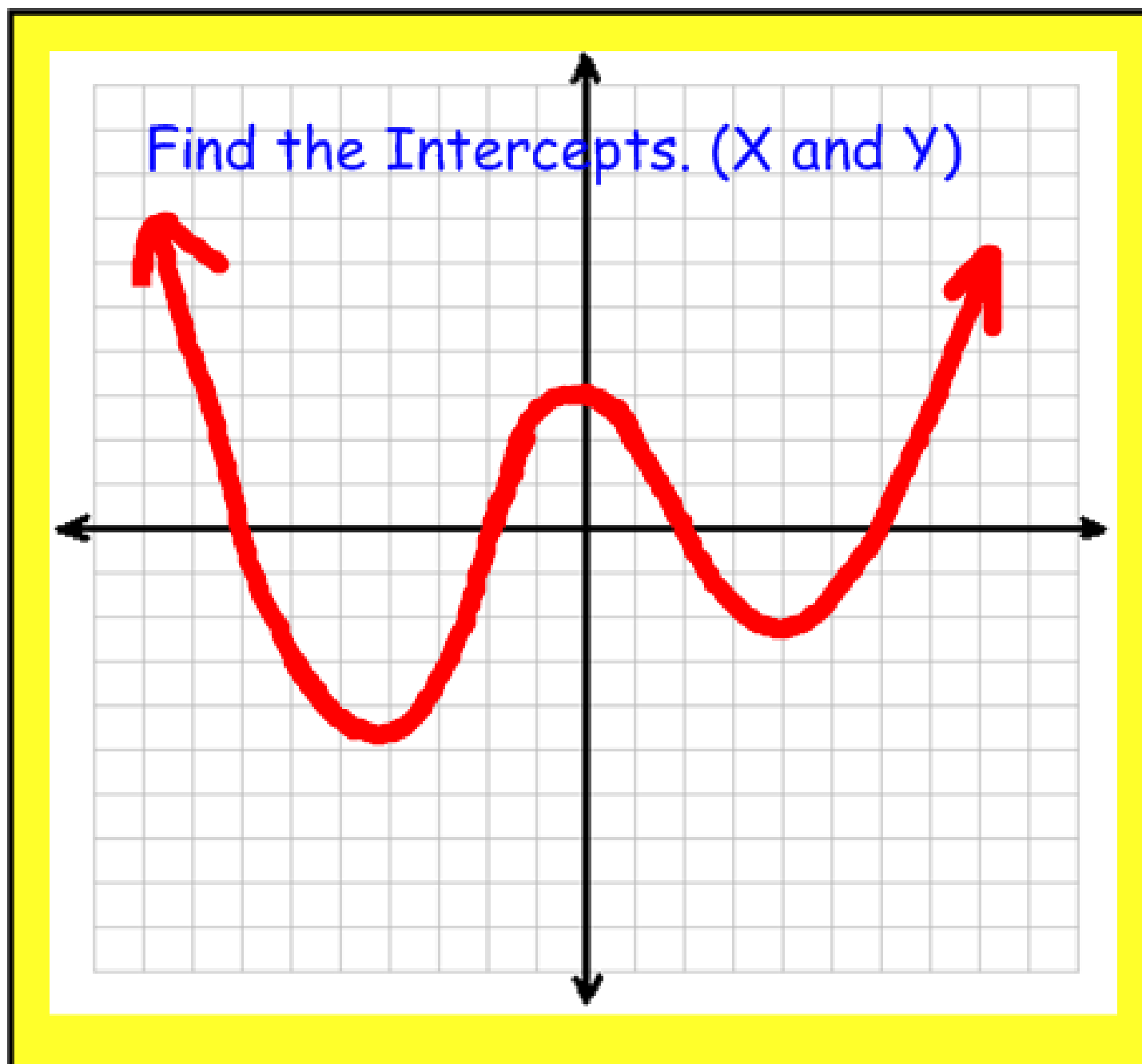
~ The X-Intercept is where the graph touches or crosses the x-axis. Its point is $(x, 0)$.

~ The Y-Intercept is where the graph touches or crosses the y-axis. Its point is $(0, y)$.

Lesson 2.1: Rectangular Coordinates and Graphs of Equations



Lesson 2.1: Rectangular Coordinates and Graphs of Equations



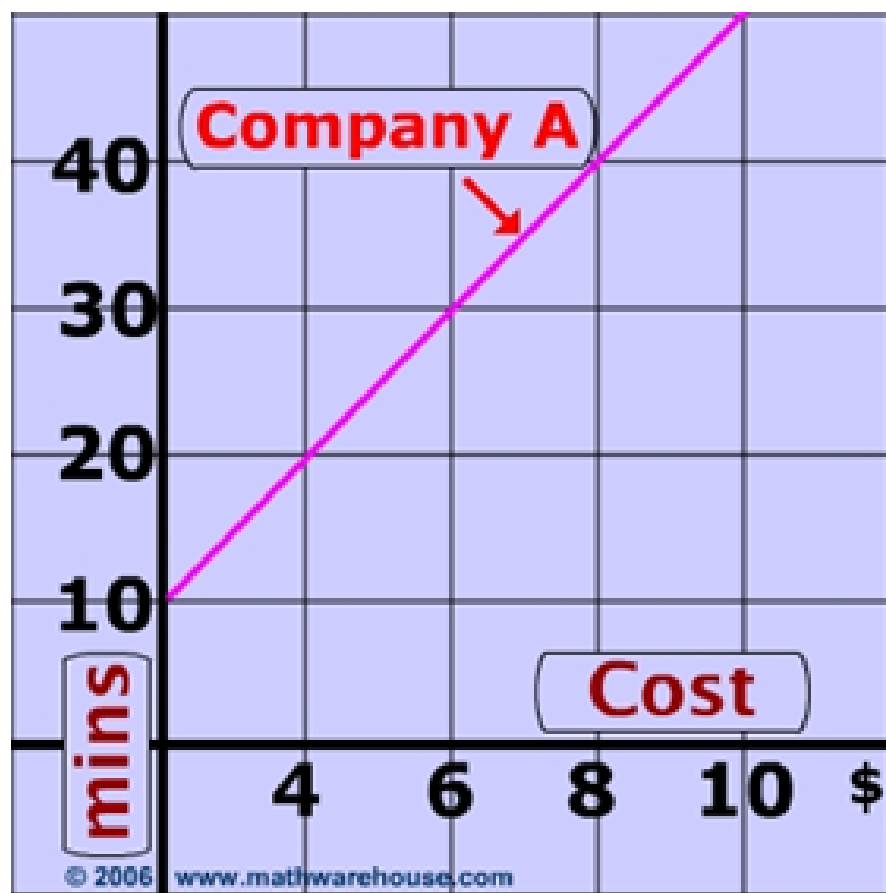
Interpreting Graphs:

Graphs play an important role in helping us to visualize relationships that exist between two variables or quantities.

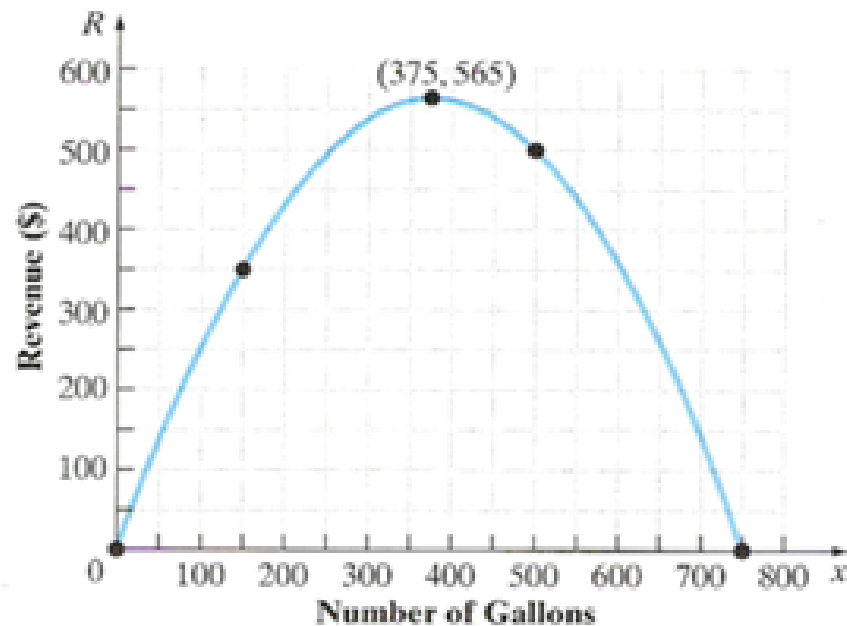
A graph is a picture that illustrates the relationship between the variables.

Lesson 2.1: Rectangular Coordinates and Graphs of Equations

Cell Phone Company A's calling plan is represented by the line on the graph below. How much does Company A charge for 20 minutes of usage?



Lesson 2.1: Rectangular Coordinates and Graphs of Equations



- A) What is the revenue if 150 gallons of gasoline are sold?
- B) How many gallons of gas are sold when the revenue is highest? What is the highest revenue?
- C) Identify and interpret the intercepts.

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- ~ Identify the intercepts from the graph
- ~ Interpret Graphs

Can you?

Homework:

Pg. 145: 1-11 all, 13, 15, 17, 21, 23,
37, 41, 57, 59

&

Trick or Treat Graphing (extra
credit)

Lesson 2.1: Rectangular Coordinates and Graphs of Equations