Math 60, Sections 4.1 and 4.2 Group Activity Name:_____

Section 4.1 Cartesian Coordinates

1. Write the location of each item on the map using a letter-number pair. Write the letter, then the number.

a. Starting point

b. Parrot

c. Palm Tree

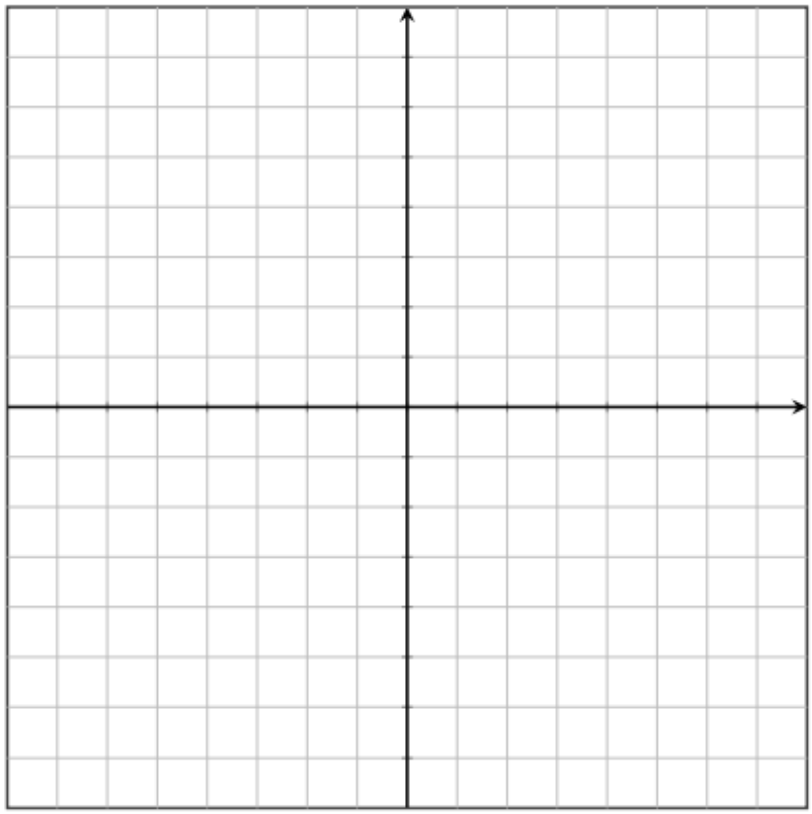
d. Key

e. Rock

f. Treasure Chest

<u>The Cartesian Coordinate System for Two Variables</u>

2. Label the axes, scale, and quadrants of the graph.



3. Plot and label each point.

a. $(4,5)$
b. $(-1,3)$
c. $(-5,-6)$
d. $(4,-7)$
e. $(7,0)$
f. $(0,-2)$
g. $(-3,5.5)$
h. $(8,8)$
i. $\left(3\frac{1}{2},-6\right)$
j. $(-3,-3)$

4. For each of the following conditions, state which quadrant the point would be in, or which axis the point would be on.

a. $x > 0$ and $y < 0$ b. $x > 0$ and $y = 0$ c. $x < 0$ and $y < 0$

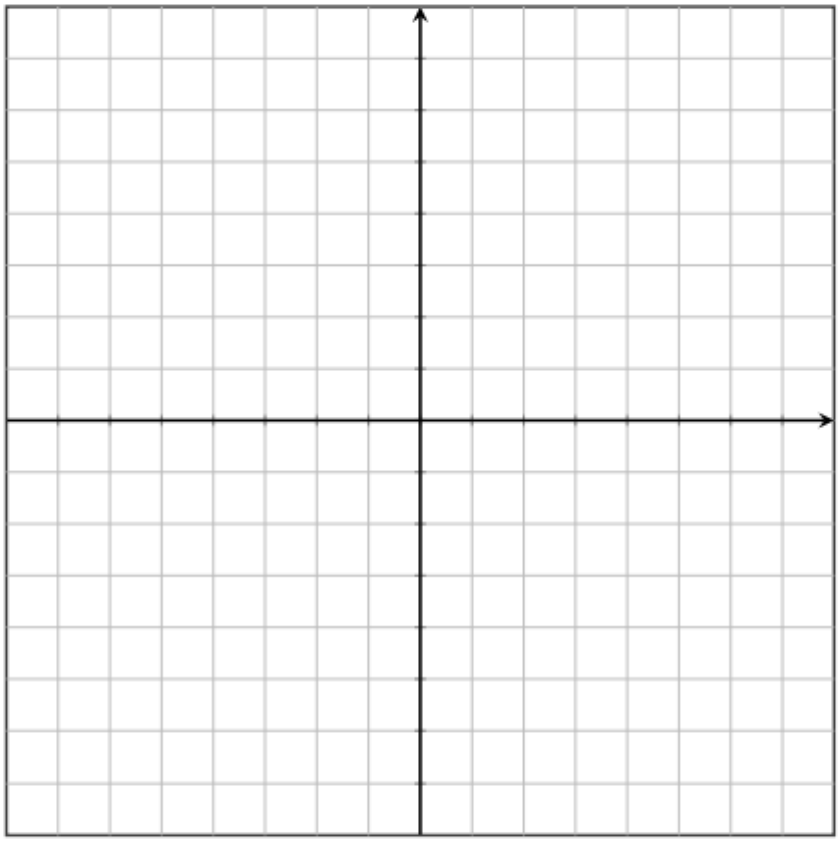
Section 4.2 Graphing Equations

5. Jamie charged $250 on a 0%-interest-for 6-month credit card. They decided to pay $50 per month until the balance is paid off, and then keep saving that amount in a savings account (we will ignore any interest for the time being.)

a. Complete the table for Jamie's balance each month. (Owing money is a negative balance)

b. Using a horizontal scale of 1 for months and a vertical scale of $50, plot Jamie's balance on the graph. Label the axes and scale.

Month x	Current Balance (Owed or Saved) y
0	$y =$
1	$y =$
2	$y =$
3	$y =$
4	$y =$
5	$y =$
6	$y =$
7	$y =$
8	$y =$
x	$y =$



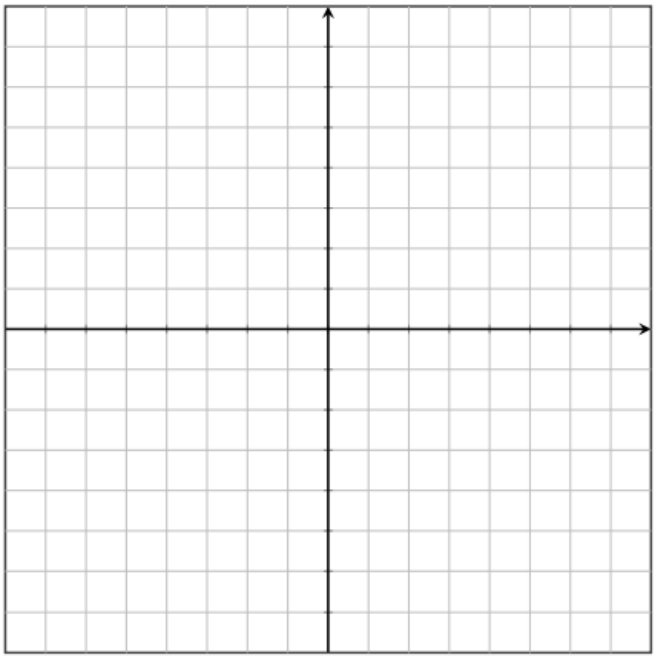
c. For this context, does it make sense to draw a line? Does it make sense to extend the pattern with arrows?

d. Look at the graph to determine which ordered pairs are solutions to the equation.

$(10, 250)$ $(-1, -300)$ $(1.5, -175)$ $(5, 25)$

6. Make a table of solutions to the linear equation $y = -x + 5$. Then graph the line.

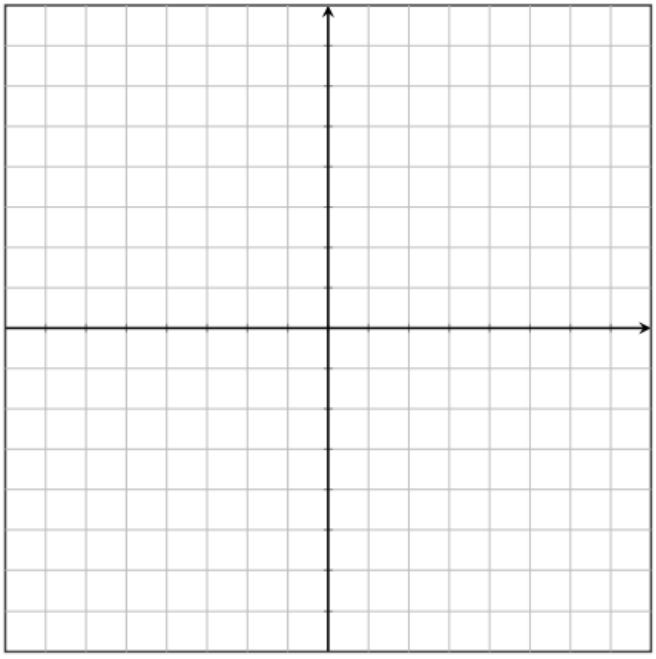
x	$y = -x + 5$	(x, y)



7. Make a table of solutions to the linear equation $y = \frac{2}{3}x - 3$. Then graph the line.

Hint: Choose your x-values wisely to avoid fractions☺

x	$y = \frac{1}{2}x - 1$	(x, y)



8. How is graphing a model with context different than graphing the equation of a line without context?

9. Determine whether the following ordered pairs are solutions to the equation $3x - y = -1$

$(0,1)$ $(1,5)$ $\left(-\frac{1}{3},0\right)$

More Practice

10. Draw a dot at each of the following coordinates and write which quadrant the point is in, or which axis it is on.

a. $(-6,0)$

b. $(4,-2)$

c. $(-3,3)$

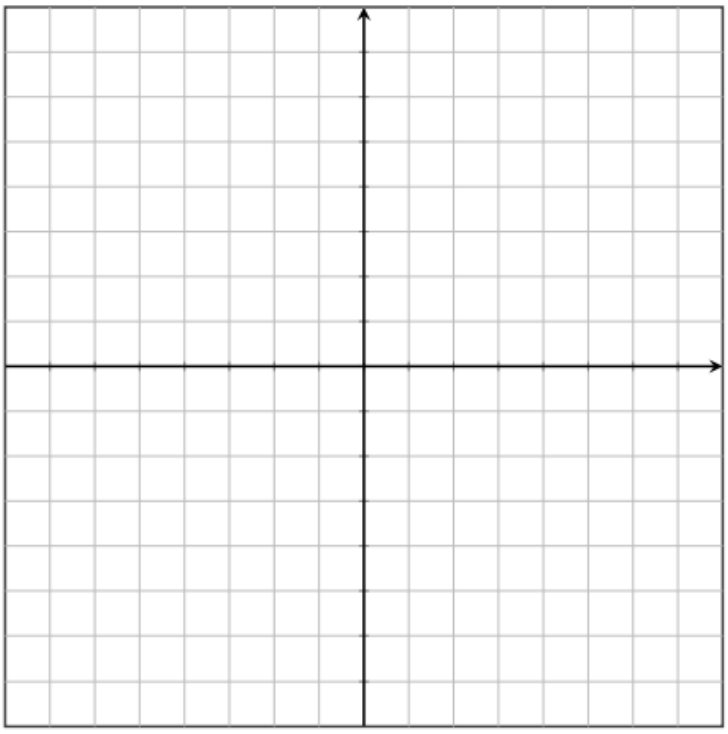
d. $(0,-4.5)$

e. $\left(\frac{1}{2},3\right)$

f. $(-5,2)$

g. $(0,0)$

h. $(-1,-8)$



11. Determine whether the following ordered pairs are solutions to the equation $y = -3x + 6$

$(1, 3)$ $(-1, -3)$ $(2, 0)$

12. Determine whether the following ordered pairs are solutions to the equation $y = -\frac{2}{3}x + 4$

$(3, -6)$ $(-3, 6)$ $(0, 4)$

13. A car's gas tank holds 12 gallons of gas. The car uses fuel at an average rate of $0.06\frac{\text{gal}}{\text{mile}}$. Make a table of solutions to the linear equation $y = 12 - 0.06x$. For this context, does it make sense to draw a line? Does it make sense to extend the pattern with arrows?

Hint: Choose your x-values wisely☺

x	$y = 12 - 0.06x$	(x, y)

14. Make a table of solutions to the linear equation $y = -4x$. Then graph the line.

x	$y = -4x$	(x, y)