Mathematician **Key**

Period ___ Date _____
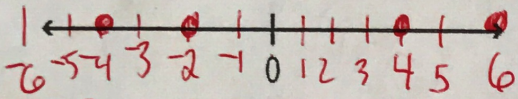
Unit 1 REVIEW Homework!

Mark points on the number line to show where these numbers belong. Be as exact as possible. <u>Explain</u> how you figured out where to put the numbers. *(or count by 2's)*

-4   6   4   -2

I noticed that 4 and -4 were opposites and should be the same distance from zero. -2 is halfway from -4 to 0 etz..

Denzel and Martin were having a "heated" conversation about the temperatures at the North Pole. In February 2014 the lowest temperature was −47° F. In February 2013 the lowest temperature was −52° F.

Denzel says the temperature was warmer in 2014. But Martin says no, the temperature actually got colder in 2014.
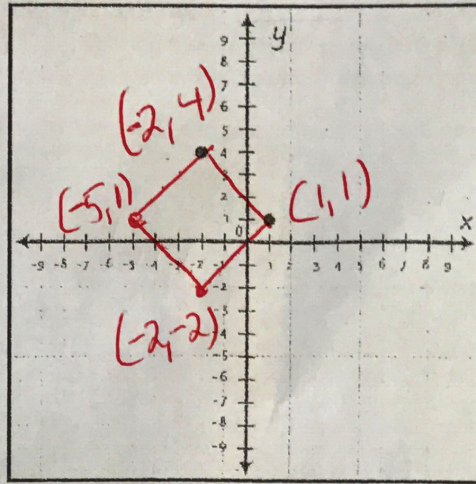
Who is right? Justify your answers.

Denzel

February 2014 −47°F   February 2013 −52°F
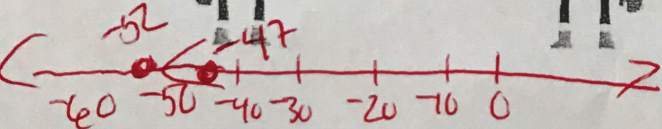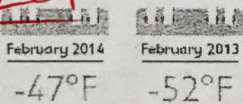
I drew a number line and made marks for every 10° below zero. I marked dots where −52°F and −47°F fall on the number line.

From the number line I can see that −52 < −47 because it is farther away from zero!

Look at the two plotted points on the coordinate grid below.

(-2,4)
(-5,1)   (1,1)
(-2,-2)

or
(1,7)
(4,4)

each side is 4 units

1. Plot two more points so that together the four points make the vertices of a square.

2. On the grid, list the coordinates of each of the four points.

Free diving is a sport in which people dive without using breathing devices, such as scuba tanks. Instead, the divers simply take a deep breath and take the plunge!

There are different categories of free diving that relate to how the diver descends and rises again. In one category, divers use a weighted sled to descend and a rope to ascend; in another, they use only a rope; in a third, divers are unrestricted— they can use any means to descend and ascend that they choose; and in a fourth, divers can only use swim strokes. The table below shows some of the records for these categories.

Rope Depth (m)	Sled/Rope Depth (m)	Unrestricted Depth (m)	Swim Strokes Depth (m)
-121	-145	-214	-101

1. What was the deepest dive? What was the shallowest dive? Justify your answer.

2. If you determined the absolute value of the numbers in the table, what would that tell you?

① order #'s from least to greatest
-214 < -145 < -121 < -101
-214 is deepest   -101 is shallowest

② The absolute values show how deep each dive was
|-145| = 145 miles deep

Nadine wants to draw a dollhouse that is symmetrical. She uses graph paper to create a blueprint of the dollhouse. The final step involves her drawing a roof. Nadine draws a triangle with a height of 6 units. Where should point C $(0, 6)$ (representing the top peak of the roof) be placed?
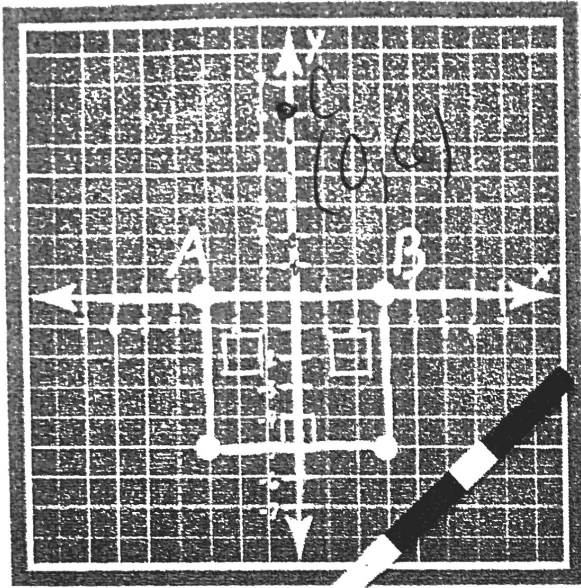
Peter drew a blueprint on 1 in. sized graph paper for one of the faces of a small rectangular prism box. Three of the coordinates of the rectangular face are:

$$P(-3, -2);\ Q(-3, 1);\ \text{and}\ R(3, 1)$$

1. To complete the rectangle, list the coordinates of point S. $(3, -2)$

2. In which quadrant is point S? $\overline{IV}$

3. How many inches is each side of the rectangle? Width- 2 smaller sides are 3 inches. length- 2 longer sides are 6 inches
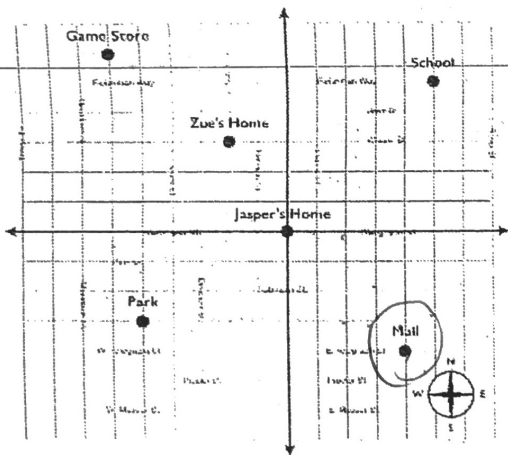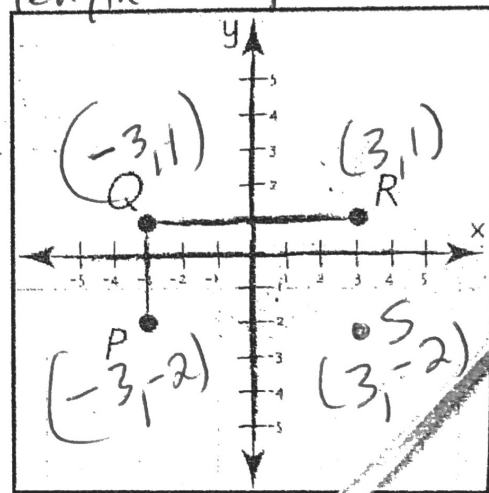
For a math project Jasper decided to use the coordinate grid to write the steps from his home (at the origin) to several places that he goes to a lot.

1. Here are his steps to one location on the map/grid. Can you tell which location it is? How?

   • Travel east 2 blocks.
   • Travel south 3 blocks.
   • Travel east 2 blocks.
   • Travel south 1 block.
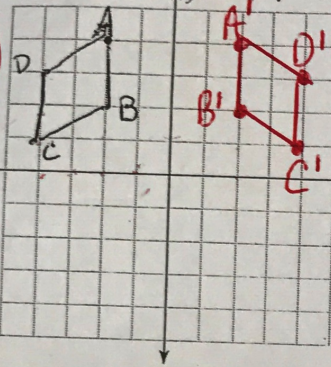
The Mall!

Reflections Worksheet !

Name _____

Date _____

Period __

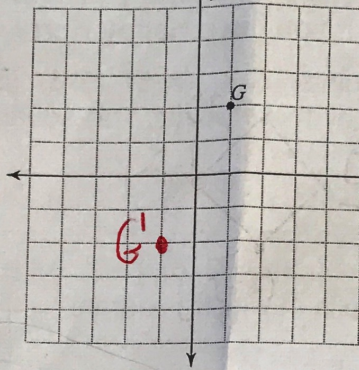Find the coordinates of the vertices of each figure after the given transformation.

1) reflection across the y-axis / Label new figure

$A(-2,4)$
$B(-2,2)$
$C(-4,1)$
$D(-4,3)$

A'B'C'D'
A' $(2,4)$
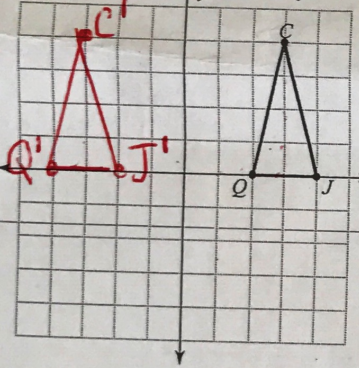B' $(2,2)$
C' $(4,1)$
D' $(4,3)$

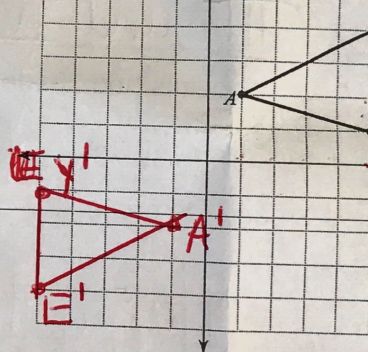**2) reflection across the origin**

$G(1,2)$

$G'(-1,-2)$

3) reflection across the y-axis / Label new figure

$C(3,4)$
$J(4,0)$
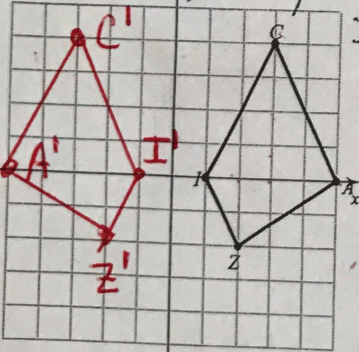$Q(2,0)$

C'J'Q'
C' $(-3,4)$
J' $(-4,0)$
Q' $(-2,0)$

4) reflection across the origin / Label new figure

A'E'Y'

$A(1,2)$ A' $(-1,-2)$
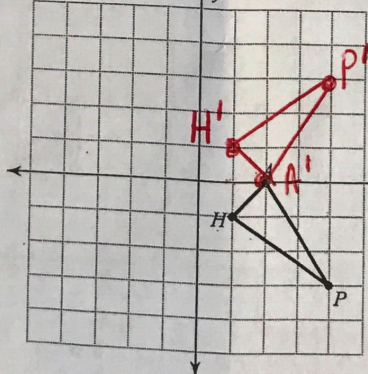$E(5,4)$ E' $(-5,-4)$
$Y(5,1)$ Y' $(-5,-1)$

5) reflection across the y-axis / Label new figure
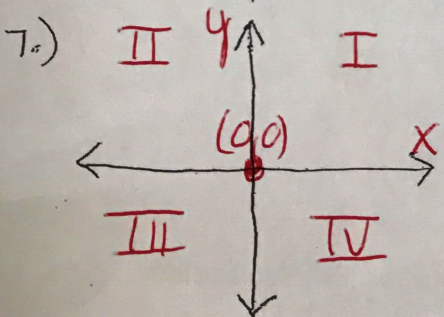
$I(1,0)$
$C(3,4)$
$A(5,0)$
$Z(2,-2)$

I'C'A'Z'
I' $(-1,0)$
C' $(-3,4)$
A' $(-5,0)$
Z' $(-2,-2)$

6) reflection across the x-axis / Label new figure

A'H'P'

$A(2,0)$ A' $(2,0)$
$H(1,-1)$ H' $(1,1)$
$P(4,-3)$ P' $(4,3)$

7.)

II   y   I
        (0,0)   X
III   IV

a.) Label the origin with a point and its ordered pair

b.) Label each quadrant.

c.) Label each axis.

Name _____ Date _____ Class _____

Puzzles, Twisters & Teasers
Face It!

Follow the directions below to create your own coordinate drawing. Then decide if you have Happy Harry or Sad Selma!

1. Plot the following points: (3, 3), (3, 5), (5, 3), (5, 5). Shade in the square defined by those points. This square is in which quadrant? I

2. Plot these points: (−3, 3), (−3, 5), (−5, 3), (−5, 5). Shade in the square. This square is in which quadrant? II

3. Plot these points: (2, −4), (2, −5), (−2, −4), (−2, −5). This rectangle is in two quadrants; what are they? III and IV

4. Plot the following two sets of points and shade in the figures:
   (2, −4), (3, −4), (2, −3), (3, −3)
   (−2, −4), (−3, −4), (−2, −3), (−3, −3)

5. Shade in a small area around the origin. (the nose!)

6. Do you have Happy Harry or Sad Selma? Happy Harry