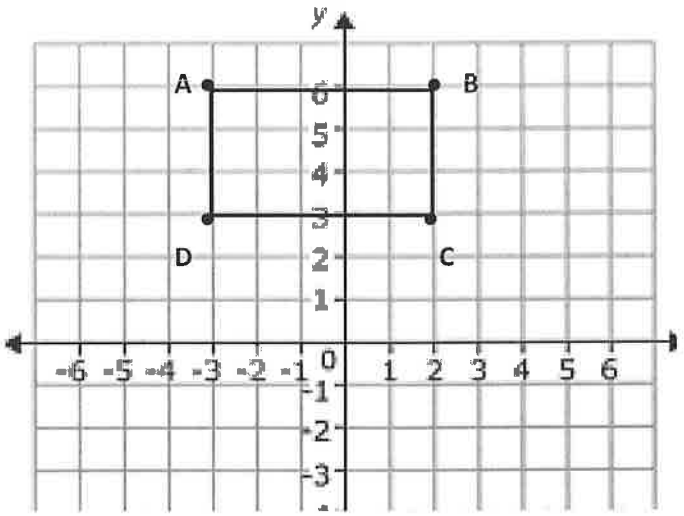
Graphing Shapes and Finding Distance

Name: _____ Date: _____ Period: _____

Graph 1:

1. Rectangle ABCD is graphed to the right. Write the coordinates of each vertices (plotted points).



A= _____ B= _____

C = _____ D = _____

a. Write a number sentence to prove the side length of $\overline{AB}$.

_____

b. Write a number sentence to prove the side length of $\overline{BC}$.

_____

c. What do you notice about the relationship of the coordinates of the above points that create the line segments? (A and B ***or*** B and C) How can the coordinates help in finding the distance between the points?

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_____

2. What is the area of the entire rectangle? _____

Graph 2: Point N is reflected across the y-axis as point O. When connected, these two points create side $\overline{NO}$.

3. Label point O on the coordinate plane and write the coordinates of these two points.

N= _____ O = _____

4. Reflect both N and O over the x-axis to create rectangle NOPQ.

P= _____ Q= _____

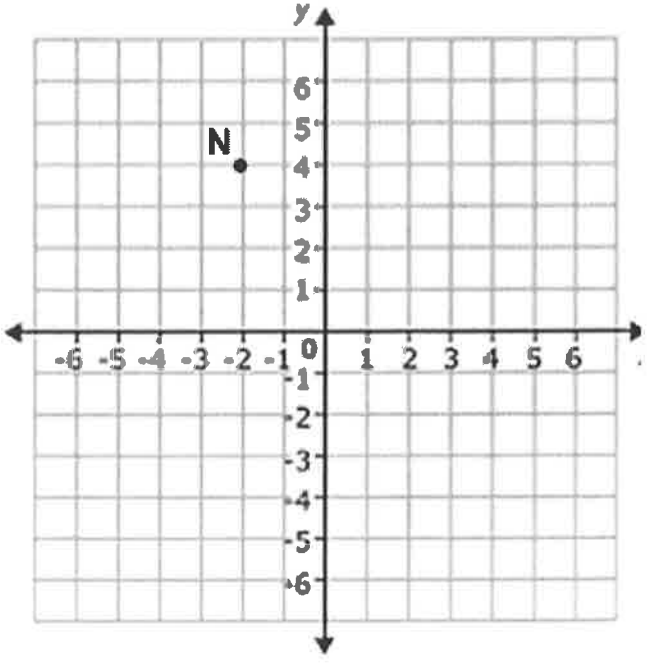
5. Write a number sentence to find the distance of side $\overline{NO}$.

_____

6. Write a number sentence to find distance of side $\overline{OP}$.

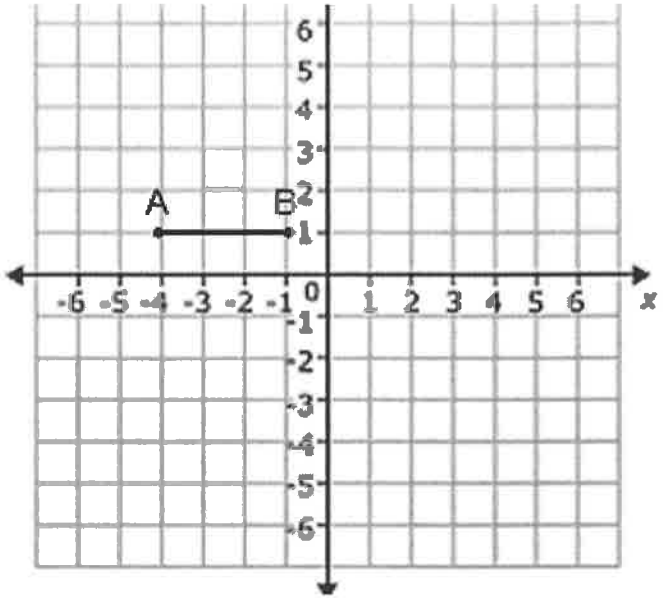
_____

7. What is the area of rectangle NOPQ? _____



Graph 3:

8. Side $\overline{AB}$ of a square is shown on the coordinate plane. The square needs to be located in Quadrants II and III. Plot and label points C and D, and connect the points to prove ABCD is a square.



a. Write the coordinate of each vertex.

A = _____

B= _____

C= _____

D= _____

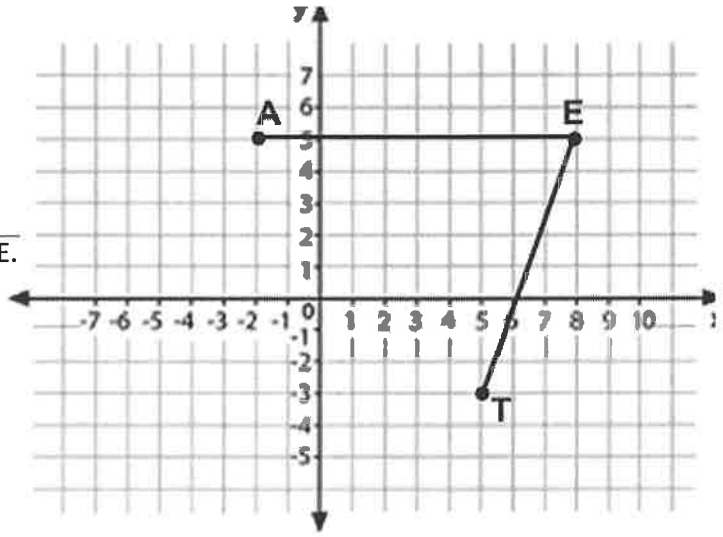
b. What is the area of the square?

_____

Graph 4: Parallelogram TEAM is located on the coordinate grid below. A parallelogram is a quadrilateral made of two sets of congruent, parallel sides.

9. Write to coordinates of each vertex.

T= _____ E= _____ A= _____



10. Write a number sentence to determine the side length of $\overline{AE}$.

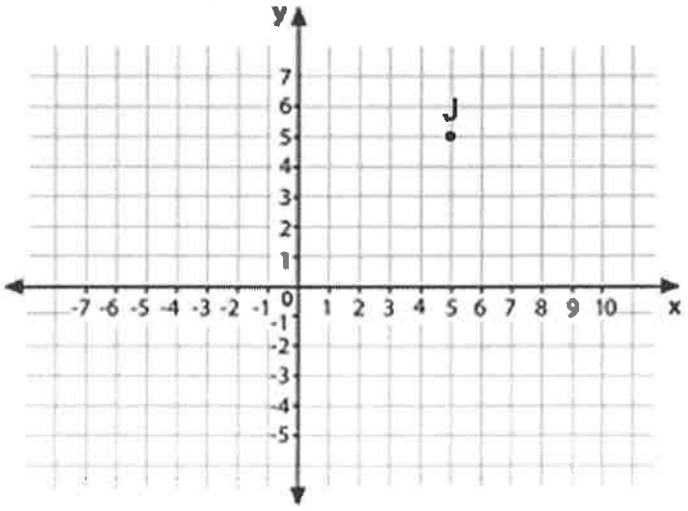
_____

11. Determine the ordered pair of missing point M.

_____

Graph 5: Point J is one vertex of Triangle JKL.

12. Reflect point J over the x-axis to create vertex K. Then, reflect J over the y-axis to create vertex L.



a. What are the coordinates of each vertex?

J= _____

K= _____

L= _____

b. What type of triangle is JKL? _____

Practice finding distance of ordered pairs.

Directions: The following questions require you to find distance between ordered pairs without a visual representation on a coordinate plane. Read each question carefully. Be sure to show all work for your solution.

13. On a coordinate plane, a park is located at (-4, 4). Grace's house is located at (-4, -5). If each unit on the coordinate grid represents one block, how far does Grace walk from home to the park?

14. Given the ordered pairs (-2, 8) and (3, 8), what is the distance between these two points?

15. What is the distance between coordinates (3, 5) and (3, 1)?

16. Sal drew a square on a coordinate plane with vertices at (-4, -5), (-4, 1), (2, -5), and (2, 1). What is the side length of the square?

17. When given just the coordinates of two points. How can you find their distance? Write at least 2-3 sentences to explain clearly explain this process.

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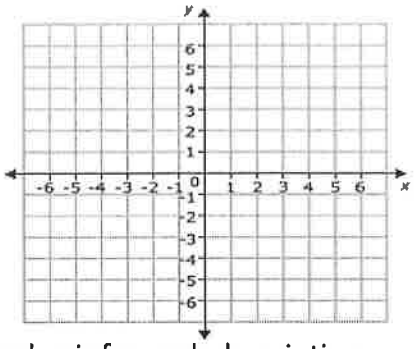
Coordinate Graph Problem Solving



1.) Label each **quadrant** on the Coordinate Graph.

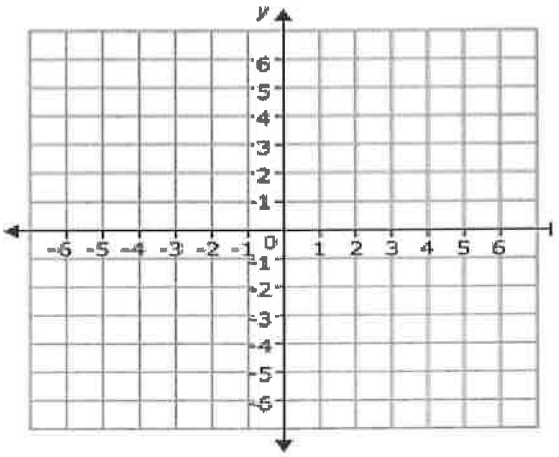
2.) Give two possible quadrants for the location of an ordered pair for each description.

a.) The **x-coordinate** and the **y-coordinate** are **equal**. Explain your reasoning.

b.) The **x-coordinate** and the **y-coordinate** are **opposites**. Explain your reasoning.

3.) Use the following descriptions for points E, F, G, and H

- Points G and H lie above the x-axis.
- Points E and F lie below the x-axis.
- Points E and H lie to the right of the y-axis.
- Points G and F lie to the left of the y-axis.
- Each point is 2.5 units from the x-axis and 3.5 units from the y-axis.



a.) Graph the points

b.) List the ordered pair for each point

E= _____ F= _____ G= _____ H= _____

c.) Which points are reflections across the x-axis?

_____

d.) Which points are reflections across the y-axis?

_____

4.) Harry thinks that the distance between points (-5,0) and (0,5) is 5 units. Is he correct? Explain why or why not.

_____

_____

5.) Calvin says that if a number has a greater value than another number, then the number also has a greater absolute value. Is he correct? If not provide a counterexample.

_____

_____

_____