



## Quadrilateral Explorations – Grade Nine

### Attachment A Characteristics of Quadrilaterals

#### *Quadrilateral Names*

1. Parallelogram
2. Rectangle
3. Rhombus
4. Square
5. Trapezoid

#### *Properties of Quadrilaterals*

1. Four sided
2. One pair of opposite sides is parallel
3. Both pairs of opposite sides are parallel
4. Both pairs of opposite are sides congruent
5. Diagonals are congruent
6. Diagonals bisect each other
7. Diagonals are perpendicular
8. All four sides are congruent

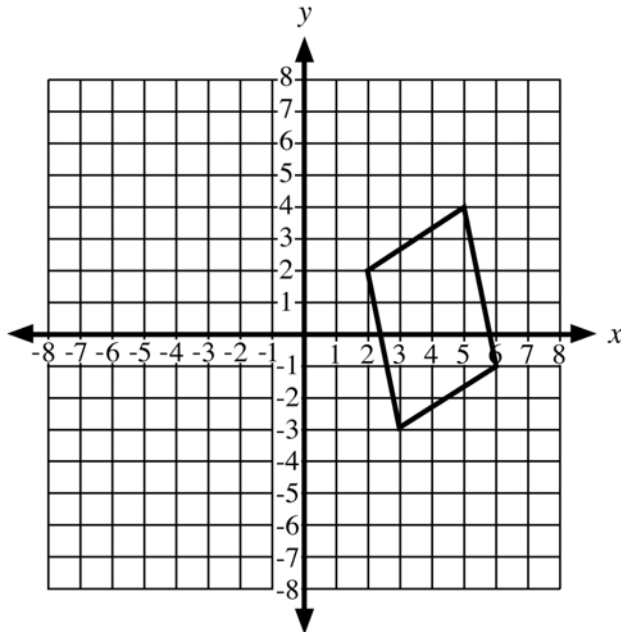
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### Attachment B The Final Analysis

#### Part One

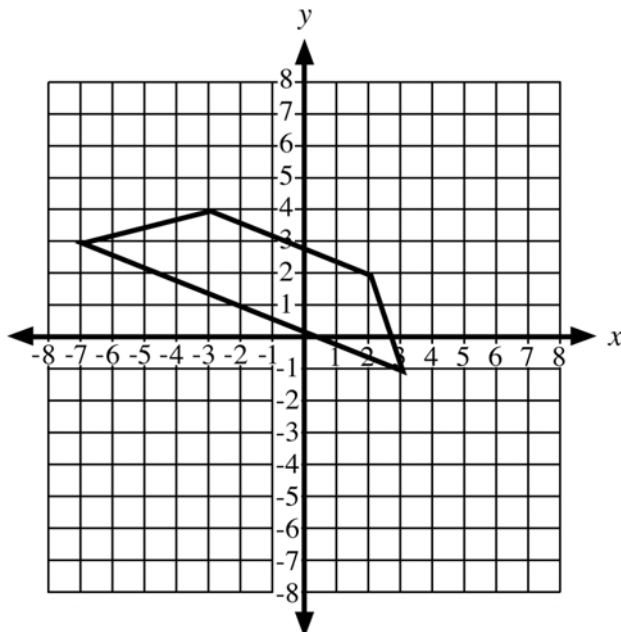
For each figure below, determine what quadrilateral name(s) describe the figure. Then, justify your choice using slope, distance and/or midpoint formulas.

1. 1.



2.

2.

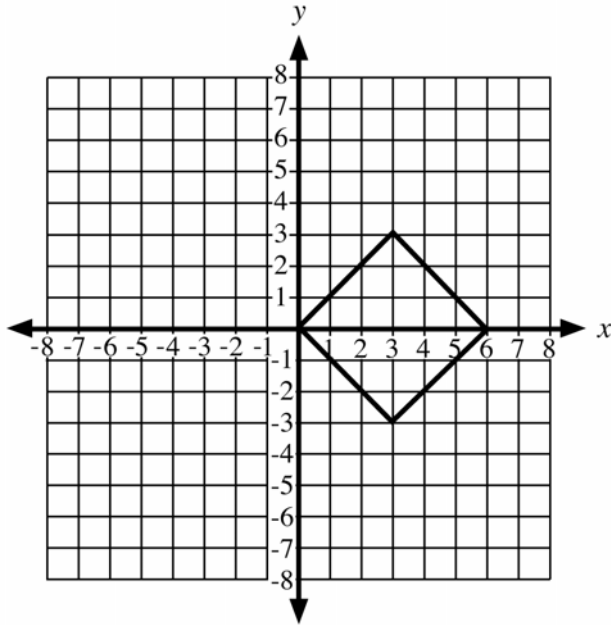


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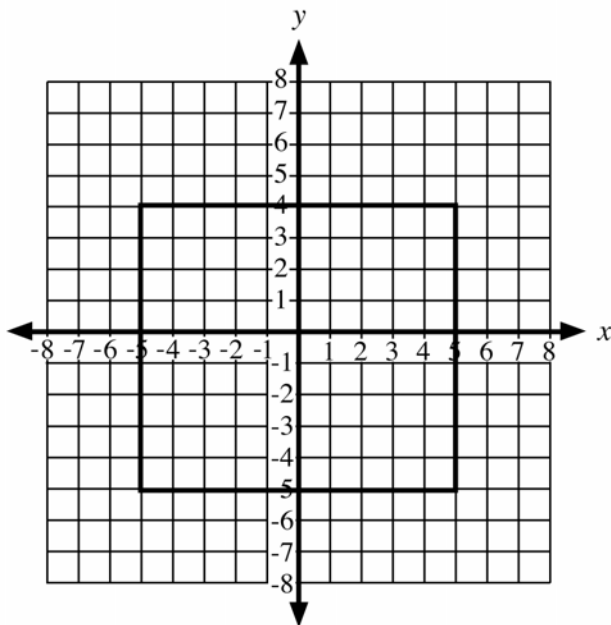
### Attachment B (Continued)

### The Final Analysis

3. 3.



4. 4.



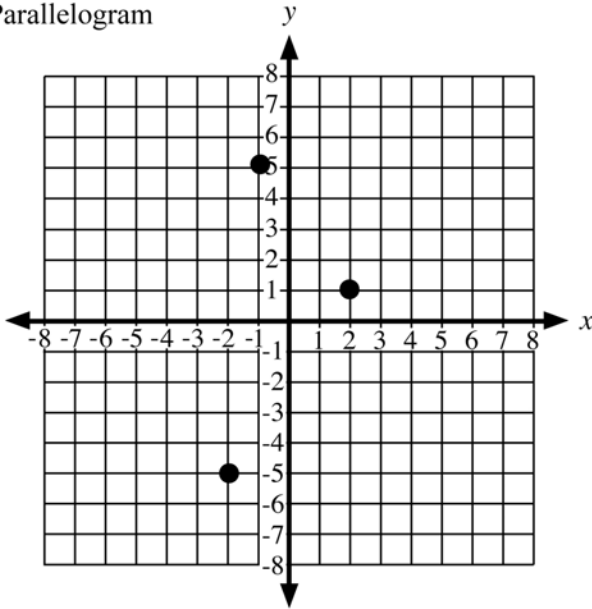
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### Attachment B (Continued) The Final Analysis

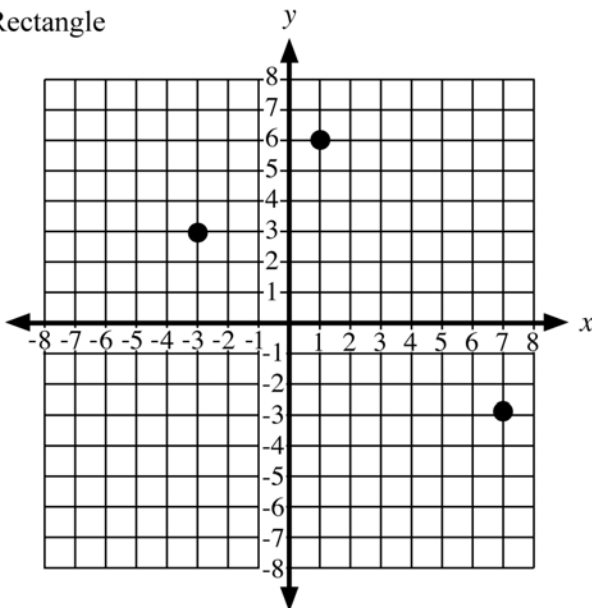
#### Part Two

Locate a fourth point in each problem to create the designated quadrilateral. Then, describe, as completely as possible, why the resulting figure is the desired quadrilateral.

1. Parallelogram



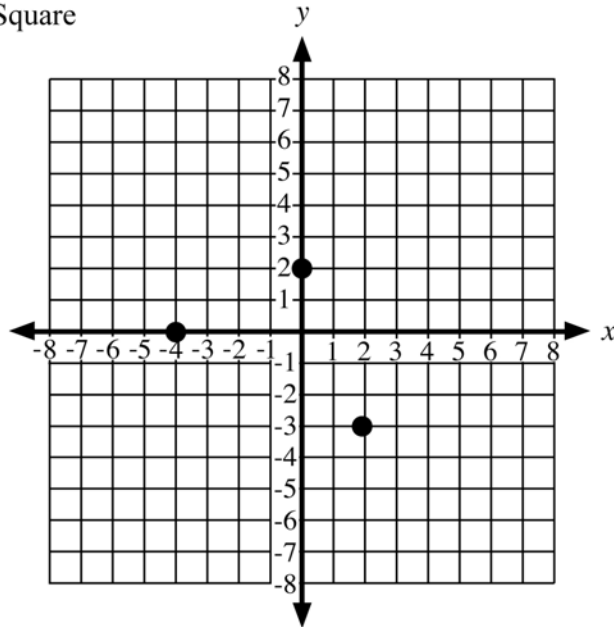
2. Rectangle



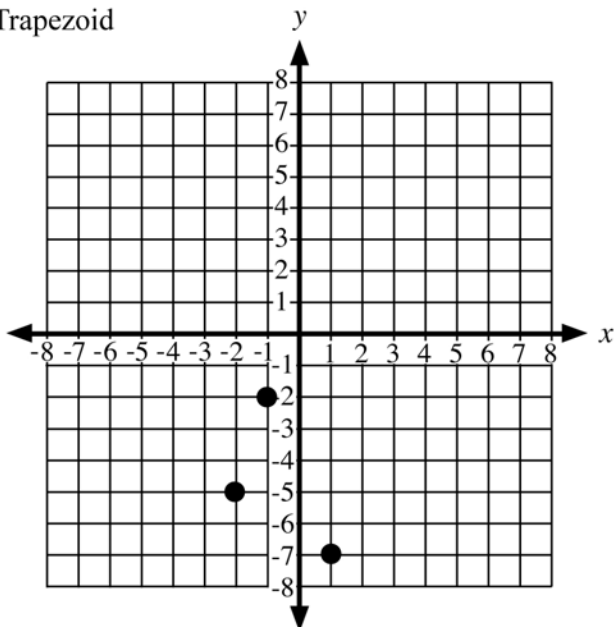
## Quadrilateral Explorations – Grade Nine

### Attachment B (Continued) The Final Analysis

3. Square



4. Trapezoid





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### Attachment C Coordinate Map Directions

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. The coordinates of the zoo are (3, 5). Place the other landmarks on the map at the indicated coordinates:

- |                         |                                |
|-------------------------|--------------------------------|
| a. zoo (3, 5)           | b. telephone company ( 2 , 4 ) |
| c. post office (1, 2)   | d. museum (3, 2)               |
| e. music store (3, 3)   | f. library ( 5 , 3 )           |
| g. school (2, 2)        | h. electric company (5, 2)     |
| i. bowling alley (3, 1) | j. bank (5, 1)                 |

2. Complete each list with the missing landmark from the map to create the indicated quadrilateral. Justify your selection.

- a. Parallelogram: school, music store, telephone company, \_\_\_\_\_  
Justification:

- b. Rectangle: bank, museum, electric company, \_\_\_\_\_  
Justification:

3. Find four points on the map that will create the indicated quadrilateral.

- a. Square: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
Justification:



## Quadrilateral Explorations – Grade Nine

### Attachment C (Continued) Coordinate Map Directions

b. Trapezoid: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
Justification:

c. Rhombus: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
Justification:

(See how many other quadrilaterals you can identify using the landmarks on the map.)