

Group Names: _____ Date: _____

8.2: Parallelogram Investigation

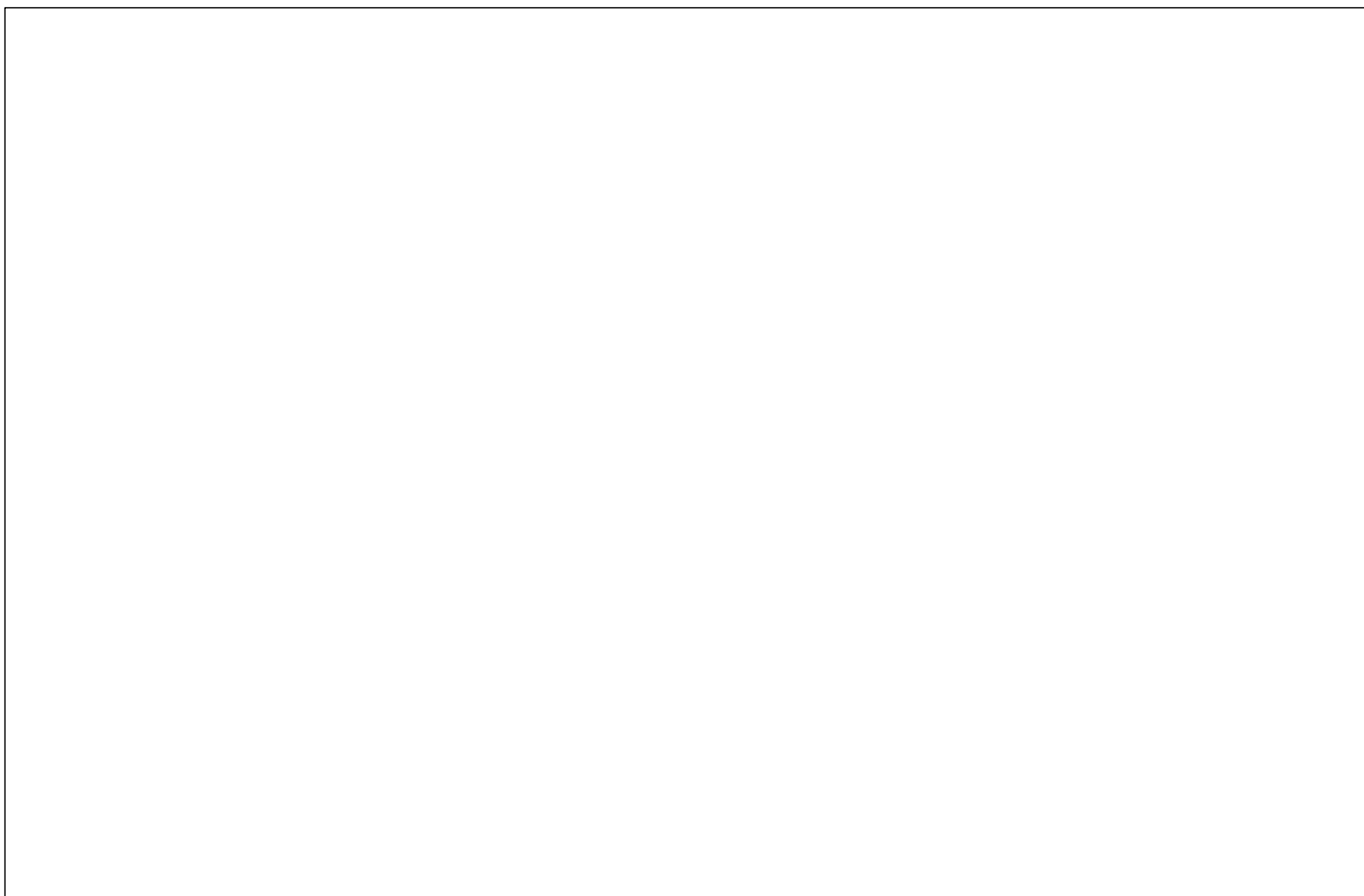
Activity 1:

Show work below in the box.

Step 1. Draw two parallelograms that are not congruent and do not share congruent angle measures. Label them ABCD and FGHI.

Step 2. Find the 8 side measures with a ruler.

Step 3. Find the 8 angle measures with a protractor.



Answer the following questions after completion of the activity 1.

1. List all of the segments that are congruent.

2. List all of the angles that are congruent.

3. Describe the angle relationships you observed.

Activity 2:

Show work below in the box.

Step 1. Draw a parallelogram. Label it JKLM.

Step 2. Draw the two diagonals. Find the measure of each diagonal.

Step 3. Draw the intersection of the diagonals. Find the measure of each segment created by a vertex and the intersection point.



Answer the following questions after completion of the activity 2.

1. What do you notice about the diagonals?

2. What geometric vocabulary term do we use to refer to this situation?

Chapter 8.2 Theorems

Based on these activities, complete the following theorems for chapter 8.2.

Theorem 77: Opposite sides of a parallelogram are _____.

Theorem 78: Opposite angles in a parallelogram are _____.

Theorem 79: Consecutive angles in a parallelogram are _____.

(i.e. the angles sum is _____)

Theorem 80: If a parallelogram has one right angle, then _____

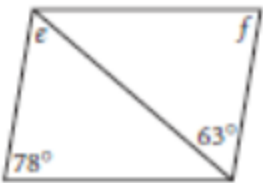
(Hint: what is true about the other 3 angles).

Theorem 81: The diagonals of a parallelogram _____ each other.

Theorem 82: Each diagonal of a parallelogram divides a parallelogram into two _____ triangles.

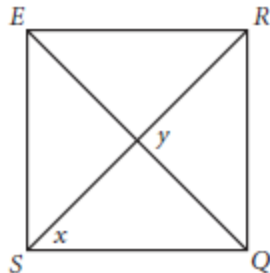
Try the following problems:

$$e = \underline{\quad? \quad}$$
$$f = \underline{\quad? \quad}$$



SQRE is a square.

$$x = \underline{\quad? \quad}$$
$$y = \underline{\quad? \quad}$$



WREK is a rectangle.

$$CR = 10$$

$$WE = \underline{\quad? \quad}$$

