

# Special Parallelograms

Name \_\_\_\_\_

## EXPLORE

Use a protractor, ruler, patty paper, or algebra to determine which segments and angles are congruent and which angles, if any, are right angles. Using measurements from the figures, answer the following:

1. Check each of the properties of a parallelogram that Figure I has:

- The opposite sides are congruent.
- The opposite angles are congruent.
- The diagonals bisect each other.
- The opposite sides are parallel.

2. Check each of these additional properties:

- All 4 sides are congruent.
- All angles are right angles.
- The diagonals are congruent.
- The diagonals are perpendicular.
- The diagonals bisect the opposite angles.

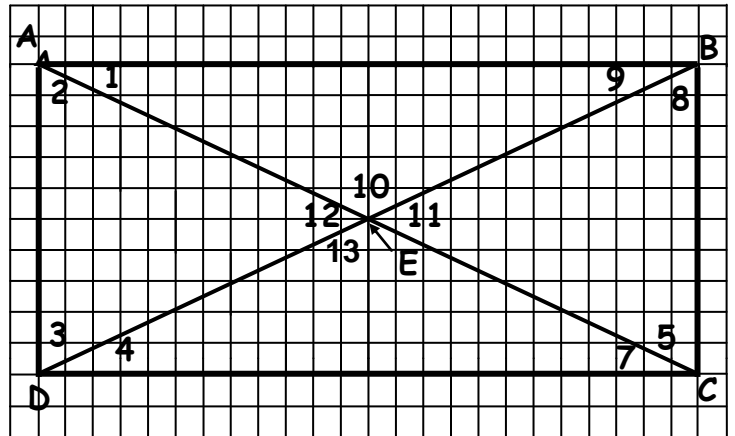


Figure I

3. Determine how many lines of symmetry and describe where they are located.

4. How would you classify figure I ?

5. Check each of the properties of a parallelogram that figure II has:

- The opposite sides are congruent.
- The opposite angles are congruent.
- The diagonals bisect each other.
- The opposite sides are parallel.

6. Check each of these additional properties:

- All 4 sides are congruent.
- All angles are right angles.
- The diagonals are congruent.
- The diagonals are perpendicular.
- The diagonals bisect the opposite angles.

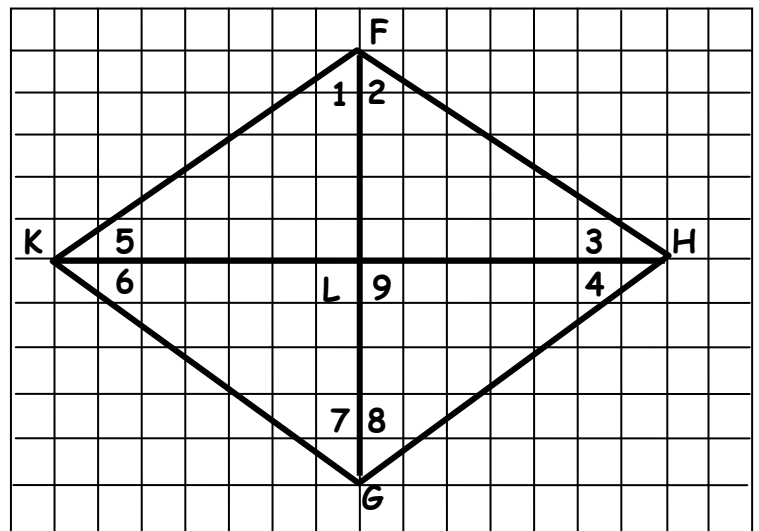


Figure II

7. Determine how many lines of symmetry and describe where they are located.

8. How would you classify figure II ?

9. Check each of the properties of a parallelogram that figure III has:

- \_\_\_ The opposite sides are congruent.
- \_\_\_ The opposite angles are congruent.
- \_\_\_ The diagonals bisect each other.
- \_\_\_ The opposite sides are parallel.

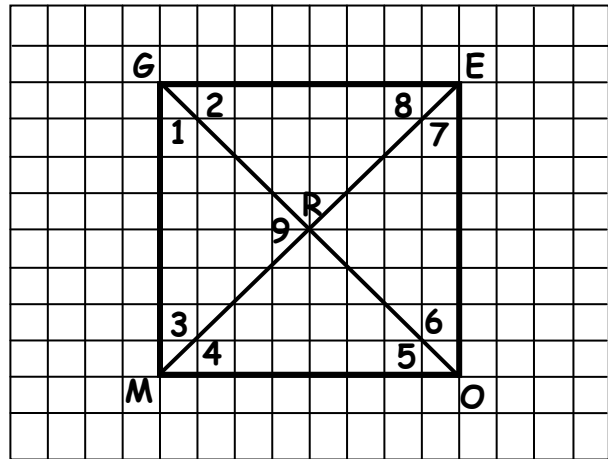


Figure III

10. Check each of these additional properties:

- \_\_\_ All 4 sides are congruent.
- \_\_\_ All angles are right angles.
- \_\_\_ The diagonals are congruent.
- \_\_\_ The diagonals are perpendicular.
- \_\_\_ The diagonals bisect the opposite angles.

11. Determine how many lines of symmetry and describe where they are located.

12. How would you classify figure III?

Use your responses to #1-12 to complete this chart:

	Parallelogram	Rectangle	Rhombus	Square
opposite sides are parallel				
opposite sides are congruent				
opposite angles are congruent				
all 4 sides are congruent				
all 4 angles are right angles				
the diagonals bisect each other				
the diagonals are perpendicular				
the diagonals are congruent				
the diagonals bisect opposite angles				