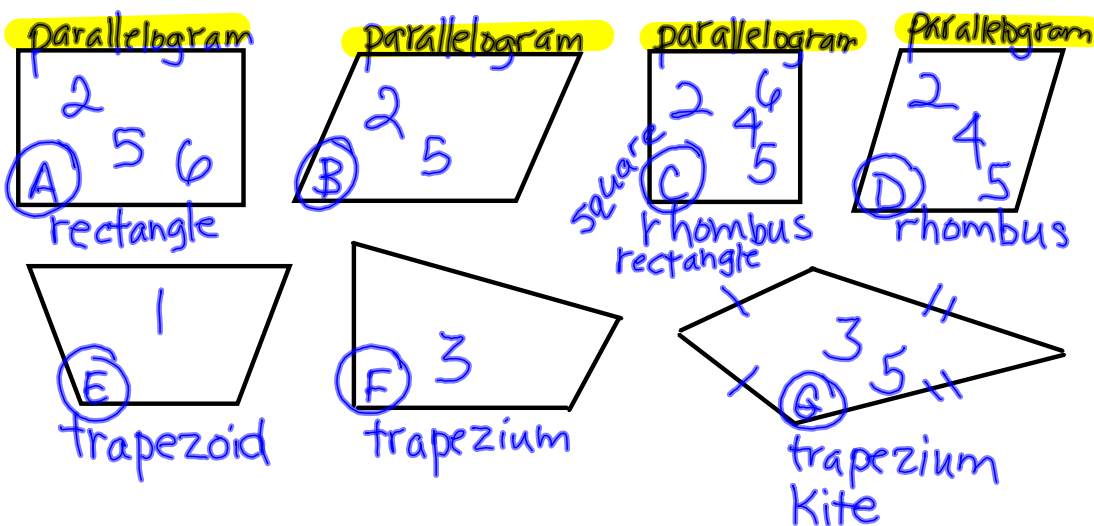


7th Grade Investigation 6

- I can classify quadrilaterals by their characteristics.
- I can use Venn diagrams to illustrate relationships among quadrilaterals.
- I can draw lines of symmetry in quadrilaterals.
- I can locate a point of symmetry in a parallelogram.



#1...one pair of parallel sides

#4...four sides of equal length

#2...two pairs of parallel sides

#5...two pairs of equal-length sides

#3...no pairs of parallel sides

#6...four right angles

Quadrilaterals can be sorted by the number of pairs of parallel sides.

A parallelogram has two pairs of parallel sides.

A trapezoid has just one pair of parallel sides.

A trapezium has no pairs of parallel sides.

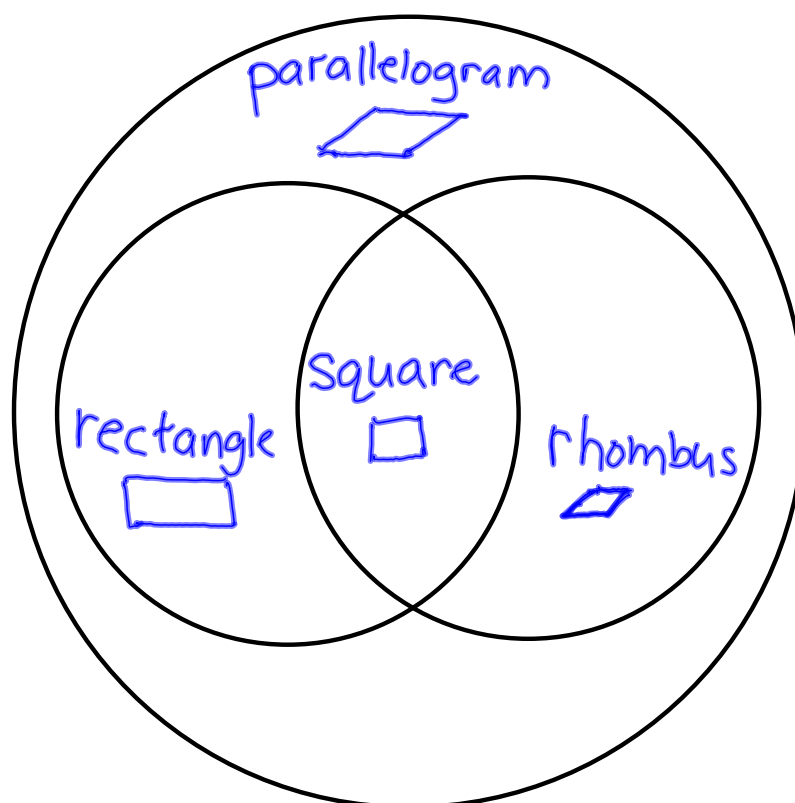
Quadrilaterals can be sorted by the lengths of their sides.

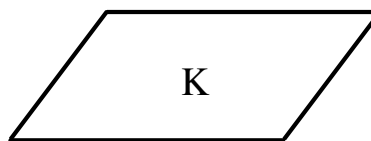
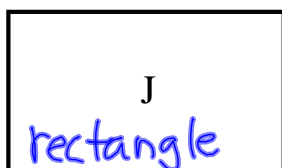
If the four sides are the same length the quadrilateral is equilateral.

A rhombus is equilateral.

Quadrilateral can be sorted by the measures of their angles.

A rectangle has four equal angles. Each angle is 90° (right angle).





Is Figure K a rectangle? Explain.

No because it doesn't have 4 right angles

Is Figure K a parallelogram? Explain.

Yes because it has two pairs of parallel sides

Does the perimeter of Figure K equal the perimeter of Figure J? Explain.

Yes, because K has sides the same length as J, just not 4 right angles

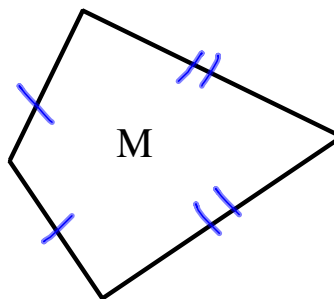
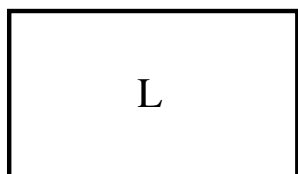


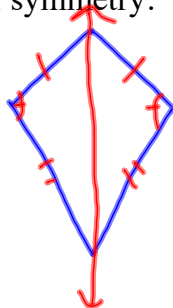
Figure M is a special type of trapezium called a **kite**.

it has two pairs of equal-length sides

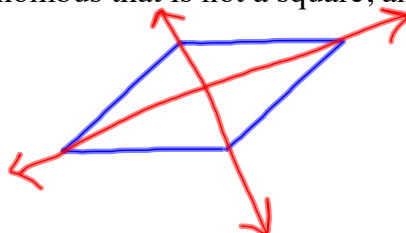
If two sides of a kite are 2 ft and 3 ft, what is the perimeter of the kite?

$$2\text{ft} + 3\text{ft} + 2\text{ft} + 3\text{ft} = 10\text{ft}$$

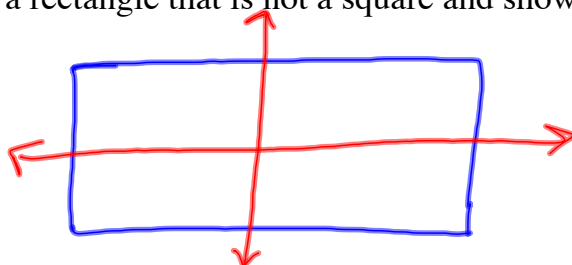
Draw a kite and show its line of symmetry.



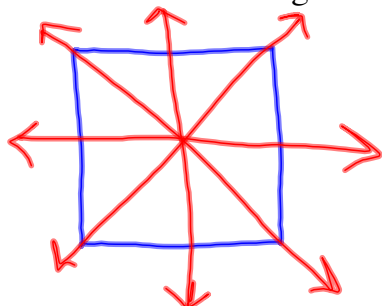
Draw a rhombus that is not a square, and show its lines of symmetry.



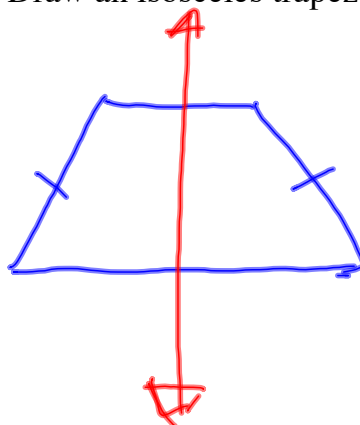
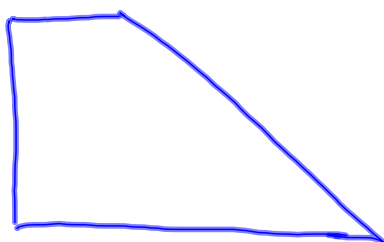
Draw a rectangle that is not a square and show its lines of symmetry.



Draw a rhombus that is a rectangle and show its lines of symmetry.



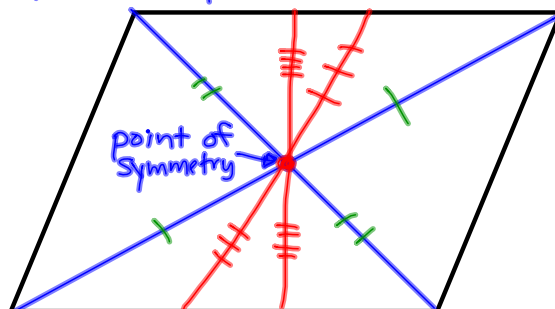
An **isosceles trapezoid** has a line of symmetry. The nonparallel sides of an isosceles trapezoid are the same length. Draw an isosceles trapezoid and show its line of symmetry.



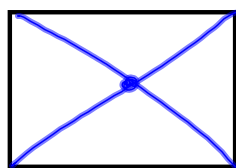
Not every trapezoid has a line of symmetry. Any parallelogram that is not a rhombus or rectangle does not have a line of symmetry.

Every parallelogram does have point symmetry.

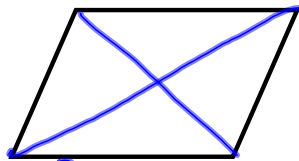
every line drawn through the point of symmetry intersects the shape at equal distances from that point



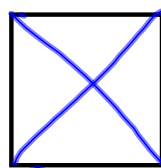
Which figures have point symmetry?



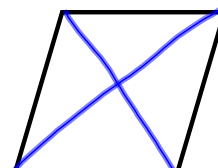
PoS



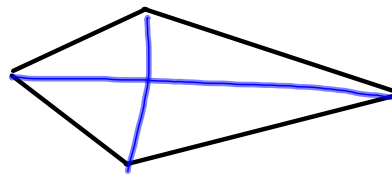
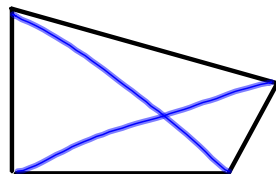
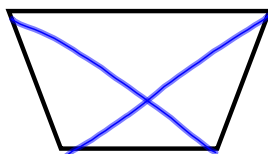
PoS



PoS



PoS



True or False (and explain)

A square is a rectangle.

True

All rectangles are parallelograms.

True

Some squares are trapezoids.

False

Some parallelograms are rectangles.

True