

Chapter 8.6: Identify Special Quadrilaterals

Quadrilateral Hierarchy

Quadrilaterals

- 4 sides
- 4 angles
- All interior \angle 's add up to 360°



Trapezoids

- Bases are \parallel (Exactly one pair of \parallel sides)
 - Legs are not \parallel , not necessarily \cong .
 - 2 pair of base \angle 's (not necessarily \cong)
 - Midsegment: average length of the bases
 - Midsegment: connect midpoints of leg
 - Midsegment: \parallel to bases
- ↓ ↓
- ### Isosceles Trapezoid
- Diagonals \cong
 - Legs \cong
 - 2 pair of bases \angle 's \cong .

Parallelograms:

- 2 pair of \parallel (opposite) sides
- 2 pair of opposite \cong angles.
- 2 pair of opposite \cong sides
- Diagonal bisect
- Consecutive \angle 's are supplementary

Kites:

- 2 pair of \cong consecutive sides
- Diagonals \perp
- one pair of opposite \cong angles.

Rectangle

- All \angle 's = 90° (\cong)
- Diagonals \cong

Rhombus:

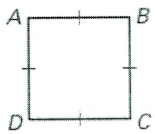
- Diagonal bisects angles
- 4 \cong sides
- Diagonal \perp

Square: Look Above

Example #1: Quadrilateral JKLM has both pairs of opposite angles congruent. What types of quadrilateral meet this condition?

Parallelogram, Rectangle, Rhombus, Square

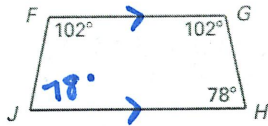
Example #2: What is the most specific name for quadrilateral ABCD?



Rhombus

Example #3: Is there enough information given in the diagram to show that quadrilateral FGHI is an isosceles trapezoid?

Explain



✓ Base are \cong

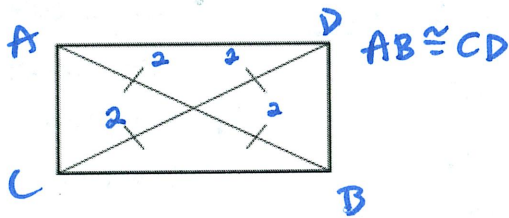
✓ Supplementary opposite consecutive base \angle 's

$$m\angle J = 360^\circ - 102^\circ - 102^\circ - 78^\circ$$

Yes: it is an isosceles trapezoid.

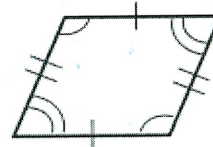
Example #4: What is the most specific name for each quadrilateral?

a.)



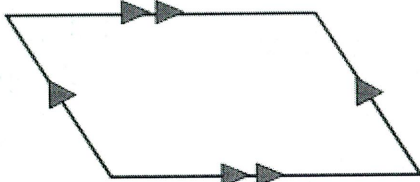
Rectangle

b.)



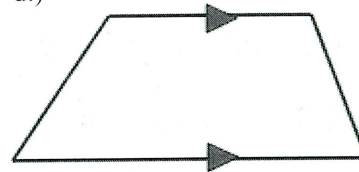
Parallelogram

c.)



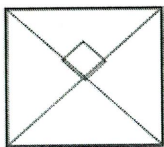
Parallelogram

d.)



Trapezoid

e.)

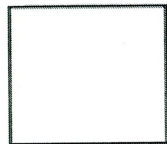


Rhombus

Kite Quadrilateral

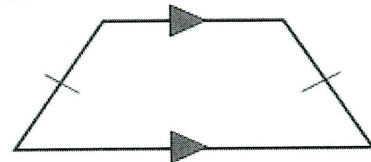
Square

f.)



Quadrilateral

g.)



Isosceles Trapezoid