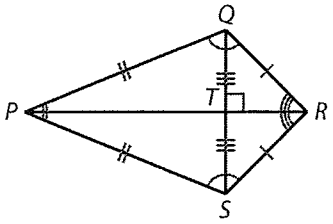
Four Kite Theorems

If a quadrilateral is a kite, then its diagonals are perpendicular.

If a quadrilateral is a kite, then exactly one pair of opposite angles are congruent.

If a quadrilateral is a kite, then one of the diagonals bisects the pair of non-congruent angles.

If a quadrilateral is a kite, then exactly one diagonal bisects the other.



Three Isosceles Trapezoid Theorems

If a quadrilateral is an isosceles trapezoid, then each pair of base angles are congruent.

If a trapezoid has one pair of congruent base angles, then the trapezoid is isosceles.

A trapezoid is isosceles if and only if its diagonals are congruent.

Trapezoid Midsegment Theorem

The midsegment of a trapezoid is parallel to each base, and its length is one half the sum of the lengths of the bases.

$\overline{XY} \parallel \overline{BC}, \overline{XY} \parallel \overline{AD}$

$XY = \frac{1}{2}(BC + AD)$