

Geometry Info Sheet #28

Theorems for Special Quadrilaterals

Theorems

If both pairs of opposite sides of a quadrilateral are congruent, then the quadrilateral is a **parallelogram**.

If both pairs of opposite angles of a quadrilateral are congruent, then the quadrilateral is a **parallelogram**.

If one pair of opposite sides of a quadrilateral is congruent and parallel, then the quadrilateral is a **parallelogram**.

If the diagonals of a quadrilateral bisect each other, then the quadrilateral is a **parallelogram**.

If one pair of adjacent sides of a parallelogram is congruent, then the parallelogram is a **rhombus**.

If the diagonals of a parallelogram bisect the angles of the parallelogram, then the parallelogram is a **rhombus**.

If the diagonals of a parallelogram are perpendicular, then the parallelogram is a **rhombus**.

If one angle of a parallelogram is a right angle, then the parallelogram is a **rectangle**.

If the diagonals of a parallelogram are congruent, then the parallelogram is a rectangle. This theorem is sometimes called the **House Builder Theorem**.

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