Geometry GT · Reference Sheet

Definitions

An **angle bisector** creates two congruent angles whose sum is the original angle.

A **perpendicular bisector** intersects a segment at it's midpoint, creating four right angles and two congruent segments whose sum is the original segment.

An **isosceles triangle** is a triangle with two congruent sides.

A **parallelogram** is a quadrilateral with two pairs of opposite sides that are parallel.

A **rectangle** is a quadrilateral with four right angles.

A **rhombus** is a quadrilateral with four congruent sides (equilateral).

Triangle Congruence Theorems

Side-Angle-Side (SAS) Triangle Congruence Theorem: In two triangles, if two pairs of corresponding sides are congruent, and the corresponding pair of included angles are congruent, then the two triangles are congruent.

Angle-Angle-Side (AAS) Triangle Congruence Theorem: In two triangles, if two pairs of corresponding angles are congruent, and a corresponding pair of non-included sides are congruent, then the two triangles are congruent.

Angle-Side-Angle (ASA) Triangle Congruence Theorem: In two triangles, if two pairs of corresponding angles are congruent, and the corresponding pair of included sides are congruent, then the two triangles are congruent.

Side-Side-Side (SSS) Triangle Congruence Theorem: In two triangles, if all three pairs of corresponding sides are congruent, then the two triangles are congruent.

Hypotenuse-Leg (HL) Triangles Congruence Theorem: In two right triangles, if two pairs of corresponding sides are congruent, and one of the pairs are the sides opposite the right angles, then the two triangles are congruent.

Additional Theorems

Vertical angles are congruent.

If two parallel lines are cut by a transversal, then alternate interior angles are congruent.

If two parallel lines are cut by a transversal, then corresponding angles are congruent.

If two figures are congruent, then corresponding parts of those figures must be congruent.

In an isosceles triangle, angles opposite the congruent sides are congruent.

A point is on the perpendicular bisector of a segment if and only if it is equidistant from the endpoints of the segment.

In a parallelogram, opposite sides are congruent.

All rectangles are parallelograms.