Definitions:

Complementary Angles	Two angles whose measures have a sum of 90°
Supplementary Angles	Two angles whose measures have a sum of 180°
Theorem	A statement that can be proven
Vertical Angles	Two angles formed by intersecting lines and facing in the opposite direction
Transversal	A line that intersects two lines in the same plane at different points
Corresponding angles	Pairs of angles formed by two lines and a transversal that make an F pattern
Same-side interior angles	Pairs of angles formed by two lines and a transversal that make a C pattern
Alternate interior angles	Pairs of angles formed by two lines and a transversal that make a Z pattern
Congruent triangles	Triangles in which corresponding parts (sides and angles) are equal in measure
Similar triangles	Triangles in which corresponding angles are equal in measure and corresponding sides are in proportion (ratios equal)
Angle bisector	A ray that begins at the vertex of an angle and divides the angle into two angles of equal measure
Segment bisector	A ray, line or segment that divides a segment into two parts of equal measure

General Properties:

Reflexive Property	A quantity is congruent (equal) to itself. a = a
Symmetric Property	If a = b, then b = a.
Transitive Property	If a = b and b = c, then a = c.
Addition Property	If equal quantities are added to equal quantities, the sums are equal.
Subtraction Property	If equal quantities are subtracted from equal quantities, the differences are equal.
Multiplication Property	If equal quantities are multiplied by equal quantities, the products are equal. (also Doubles of equal quantities are equal.)
Division Property	If equal quantities are divided by equal nonzero quantities, the quotients are equal. (also Halves of equal quantities are equal.)
Substitution Property	A quantity may be substituted for its equal in any expression.
Segment Addition Postulate	The whole is equal to the sum of its parts. $AB + BC = AC$
Angle Addition Postulate	The whole is equal to the sum of its parts. $m<ABC + m<CBD = m<ABD$

Lines and Angles:

Congruent Supplements	Supplements of the same angle, or congruent angles, are congruent.
Congruent Complements	Complements of the same angle, or congruent angles, are congruent.
Linear Pair Postulate	If two angles form a linear pair, they are supplementary.
Vertical Angles Theorem	Vertical angles are congruent.
Triangle Sum Theorem	The sum of the interior angles of a triangle is 180°.
Base Angle Theorem (Isosceles Triangle)	If two sides of a triangle are congruent, the angles opposite these sides are congruent.

Corresponding Angles	If two **parallel** lines are cut by a transversal, then the pairs of corresponding angles are congruent.
Alternate Interior Angles	If two **parallel** lines are cut by a transversal, then the alternate interior angles are congruent.
Alternate Exterior Angles	If two **parallel** lines are cut by a transversal, then the alternate exterior angles are congruent.
Interiors on Same Side	If two **parallel** lines are cut by a transversal, the interior angles on the same side of the transversal are supplementary.

Triangles:

Side-Side-Side (SSS) Congruence	If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.
Side-Angle-Side (SAS) Congruence	If two sides and the included angle of one triangle are congruent to the corresponding parts of another triangle, the triangles are congruent.
Angle-Side-Angle (ASA) Congruence	If two angles and the included side of one triangle are congruent to the corresponding parts of another triangle, the triangles are congruent.
Angle-Angle-Side (AAS) Congruence	If two angles and the non-included side of one triangle are congruent to the corresponding parts of another triangle, the triangles are congruent.
Hypotenuse-Leg (HL) Congruence (right triangle)	If the hypotenuse and leg of one right triangle are congruent to the corresponding parts of another right triangle, the two right triangles are congruent.
CPCTC	Corresponding parts of congruent triangles are congruent.
Angle-Angle (AA) Similarity	If two angles of one triangle are congruent to two angles of another triangle, the triangles are **similar.**
SSS for Similarity	If the three sets of corresponding sides of two triangles are in proportion, the triangles are similar.
SAS for Similarity	If an angle of one triangle is congruent to the corresponding angle of another triangle and the lengths of the sides including these angles are in proportion, the triangles are similar.
Side Proportionality	If two triangles are **similar**, the corresponding sides are in proportion.
Mid-segment Theorem (also called mid-line)	The segment connecting the midpoints of two sides of a triangle is **parallel** to the third side and is half as long.