

cheat sheet

GEOMETRY THEOREMS

General

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 Postulate	If equal quantities are added to equal quantities, the sums are equal.
Subtraction Postulate	If equal quantities are subtracted from equal quantities, the differences are equal.
Multiplication Postulate	If equal quantities are multiplied by equal quantities, the products are equal. (also Doubles of equal quantities are equal.)
Division Postulate	If equal quantities are divided by equal nonzero quantities, the quotients are equal. (also Halves of equal quantities are equal.)
Substitution Postulate	A quantity may be substituted for its equal in any expression. The whole is equal to the sum of its parts.
Partition Postulate	Also: Betweenness of Points: $AB + BC = AC$ Angle Addition Postulate: $m\angle ABC + m\angle CBD = m\angle ABD$
Construction	Two points determine a straight line.
Construction	From a given point on (or not on) a line, one and only one perpendicular can be drawn to the line.

Angles

Right Angles	All right angles are congruent.
Straight Angles	All straight angles are congruent.
Congruent Supplements	Supplements of the same angle, or congruent angles, are congruent.
Congruent Complements	Complements of the same angle, or congruent angles, are congruent.
Vertical Angles	Vertical angles are congruent.
Linear Pair	If two angles form a linear pair, they are supplementary.
Triangle Sum	The sum of the interior angles of a triangle is 180° .
Exterior Angle	The measure of an exterior angle of a triangle is equal to the sum of the measures of the two non-adjacent interior angles. The measure of an exterior angle of a triangle is greater than either non-adjacent interior angle.
Base Angle Theorem (Isosceles Triangle)	If two sides of a triangle are congruent, the angles opposite these sides are congruent.
Base Angle Converse (Isosceles Triangle)	If two angles of a triangle are congruent, the sides opposite these angles are congruent.