

College Geometry—Lines, Angles, and Triangles

POINT, LINES, PLANES, AND LINE SEGMENTS	
Point	Has position only. It has no length, width, or thickness.
Line	Has length but no width or thickness.
Plane	Has length and width but no thickness.
Line Segment	The part of a straight line between two of its points, including the two points.
Congruent Segments	Two line segments having the same length are said to be congruent.
CIRCLES	
Circle	The set of all points in a plane that are the same distance from the center.
Circumference	The distance around the circle. (360°)
Radius	A segment joining the center of a circle to a point on the circle. (Plural: radii)
Chord	A segment joining any two points on a circle.
Diameter	A chord through the center of the circle; it is the longest chord and is twice the length of a radius.
Arc	Continuous part of a circle
Semicircle	An arc measuring one-half the circumference of a circle and thus contains 180° .
Central Angle	An angle that is formed by two radii.
Congruent Circles	Circles having congruent radii.
ANGLES	
Acute Angle	An angle whose measure is less than 90° .
Right Angle	An angle that measures 90° .
Obtuse Angle	An angle whose measure is more than 90° and less than 180° .
Straight Angle	An angle that measures 180° .
Reflex Angle	An angle whose measure is more than 180° and less than 360° .
Congruent Angles	Angles that have the same number of degrees.
Angle Bisect	A line that bisects an angle divides it into two congruent parts.
Perpendiculars	Lines or rays or segments that meet at right angles.
Perpendicular Bisector	Is perpendicular to the segment and bisects it.
TRIANGLES	
Polygon	A closed plane figure bounded by straight line segments as sides.
Triangle	A polygon having three sides.
Vertex of a Triangle	A point at which two of the sides meet. (Plural: vertices)
Scalene Triangle	A triangle having no congruent sides.
Isosceles Triangle	A triangle having at least two congruent sides.
Equilateral Triangle	A triangle having three congruent sides.
Right Triangle	A triangle having a right angle.
Obtuse Triangle	A triangle having an obtuse angle.
Acute Triangle	A triangle having three acute angles.
Angle Bisector of a Triangle	A segment or ray that bisects an angle and extends to the opposite side.
Median of a Triangle	A segment from a vertex to the midpoint of the opposite side.
Perpendicular Bisector of a Side	A line that bisects and is perpendicular to a side.
Altitude to a Side of a Triangle	A segment from a vertex perpendicular to the opposite side.
Altitudes of Obtuse Triangle	The altitude drawn to either side of the obtuse angle falls outside the triangle.
KINDS OF PAIRS OF ANGLES	
Adjacent Angles	Two angles which have the same vertex and a common side between them.
Vertical Angles	Two nonadjacent angles formed by two intersecting lines.
Complementary Angles	Two angles whose measures total 90° .
Supplementary Angles	Two angles whose measures total 180° .
PRINCIPLES OF PAIRS OF ANGLES	
Principle 1:	If an angle of c° is cut into two adjacent angles of a° and b° , then $a^\circ + b^\circ = c^\circ$.
Principle 2:	Vertical angles are congruent.
Principle 3:	If two complementary angles contain a° and b° , then $a^\circ + b^\circ = 90^\circ$.
Principle 4:	Adjacent angles are complementary if their exterior sides are perpendicular to each other.
Principle 5:	If two supplementary angles contain a° and b° , then $a^\circ + b^\circ = 180^\circ$.
Principle 6:	Adjacent angles are supplementary if their exterior sides lie in the same straight line.
Principle 7:	If supplementary angles are congruent, each of them is a right angle. (Equal supplementary angles are right angles.)