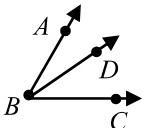


# Angle Proofs Reference

<i>Properties of Equality</i>		<i>Properties of Congruence</i>
Addition Property Subtraction Property Multiplication Property Division Property Distributive Property	Substitution Property Reflexive Property Symmetric Property Transitive Property	Reflexive Property Symmetric Property Transitive Property

<i>Definitions</i>	
Definition of Congruence	$m\angle A = m\angle B \leftrightarrow \angle A \cong \angle B$
Definition of Angle Bisector	An angle bisector divides an angle into two equal parts.
Definition of Complementary Angles	Complementary $\leftrightarrow$ Sum is $90^\circ$ .
Definition of Supplementary Angles	Supplementary $\leftrightarrow$ Sum is $180^\circ$ .
Definition of Perpendicular	Perpendicular lines form right angles.
Definition of a Right Angle	A right angle = $90^\circ$ .

<i>Postulates</i>	
Angle Addition Postulate	 $m\angle ABD + m\angle DBC = m\angle ABC$


<i>Theorems</i>	
Vertical Angles Theorem	If two angles are vertical, then they are congruent.
Complement Theorem	If two angles form a right angle, then they are complementary. <b>Right Angle <math>\rightarrow</math> Complementary</b>
Supplement Theorem	If two angles form a linear pair, then they are supplementary. <b>Linear pair <math>\rightarrow</math> Supplementary</b>
Congruent Complements Theorem	If $\angle A$ is complementary to $\angle B$ and $\angle C$ is complementary to $\angle B$ , then $\angle A \cong \angle C$
Congruent Supplements Theorem	If $\angle A$ is supplementary to $\angle B$ and $\angle C$ is supplementary to $\angle B$ , then $\angle A \cong \angle C$

# Segments Proofs Reference

Properties of Equality	
Addition Property Subtraction Property Multiplication Property Division Property Distributive Property	Substitution Property Reflexive Property Symmetric Property Transitive Property
The properties above may only be used with EQUAL signs. The following properties of congruence can be applied to statements with congruence symbols:	

Properties of Congruence	
Reflexive Property of Congruence	For any segment AB, $\overline{AB} \cong \overline{AB}$ .
Symmetric Property of Congruence	If $\overline{AB} \cong \overline{CD}$ , then $\overline{CD} \cong \overline{AB}$ .
Transitive Property of Congruence	If $\overline{AB} \cong \overline{CD}$ and $\overline{CD} \cong \overline{EF}$ , then $\overline{AB} \cong \overline{EF}$ .

Definitions	
Definition of Congruence	Segments are congruence if and only if they have the same measure: If $\overline{AB} \cong \overline{CD}$ , then $AB = CD$ . If $AB = CD$ , then $\overline{AB} \cong \overline{CD}$ .
Definition of Midpoint	The midpoint of a segment divides the segment into 2 equal (congruent) parts. If M is the midpoint of AB, then $AM = MB$ .

Postulates	
Segment Addition Postulate	If A, B, and C are collinear points and B is between A and C:  then: $AB + BC = AC$