

❖ Methods of Proving Angles Congruent

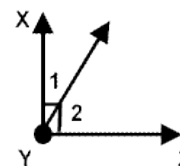
- Definition of Congruent Angles
 - (See Lesson 2.4, page 13)
 - Used with measurement notation
 - Transitive step needed: $m\angle 1 = m\angle 2$ (2nd to last step)
 - Rarely used
- Right angles are congruent
 - (See Lesson 2.4, example 8 & Lesson 2.5, example 3)
- Vertical angles are congruent
 - (See Lesson 2.5, example 4)
- Definition of Bisects
 - (See Lesson 2.5, example 1)
 - Must be GIVEN bisects
- Transitive Property
 - (See Lesson 2.5, example 4)
 - If angles are congruent to the same angle (or congruent angles), then they are congruent to each other.
- Congruent Supplements Theorem
 - (See Lesson 2.6, example 4)
 - Need two supplementary statements: supp supp
- Congruent Complements Theorem
 - (See Lesson 2.6, examples 5 & 6)
 - Need two complementary statements: comp comp
- Angle Addition/Subtraction Properties
 - (See Lesson 2.7, example 13)
 - There should be 3 angle congruence statements in your proof
 - The two you are adding (or subtracting)
 - ◆ A reflexive step may be needed.
 - The sum (or difference)

❖ Methods of Proving Segments Congruent

- Definition of Congruent Segments
 - Used with measurement notation
 - Transitive step needed: $AB = BC$ (2nd to last step)
 - Rarely used
- Definition of Midpoint
 - Must be GIVEN midpoint
- Transitive Property
 - If segments are congruent to the same segment (or congruent segments), then they are congruent to each other.
- Segment Addition/Subtraction Properties
 - (See Lesson 2.7, example 12)
 - There should be 3 segment congruence statements in your proof
 - The two you are adding (or subtracting)
 - ◆ A reflexive step may be needed.
 - The sum (or difference)

❖ How to Prove Two Angles are Complementary

- (See Lesson 2.6, examples 1 & 8)
- First you need a right angle:
 - i.e. $\angle XYZ$ is a right angle
- Then you need to use the Angle Addition Postulate to show that the sum of two angles is a right angle:
 - i.e. $m\angle 1 + m\angle 2 = m\angle XYZ$
- Finally you can prove the angles are complementary using the Definition of Complementary Angles



❖ How to Prove Two Angles are Supplementary

- (See Lesson 2.6, examples 2 & 7)
- First you need to identify that two angles form a linear pair:
 - i.e. $\angle 1$ and $\angle 2$ form a linear pair Assumed from diagram
- Then you can prove the angles are supplementary using the Linear Pair Postulate

