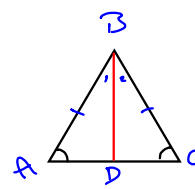


4.6 Properties of Isosceles, Equilateral, and Right triangles

Angle and Side Relationships

Isosceles: At least 2 sides  $\cong$   
 Equilateral: All sides  $\cong$

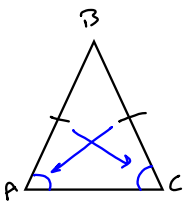


1.  $\overline{AB} \cong \overline{CB}$   
 $\overline{BD}$  bisects  $\angle ABC$
  2.  $\angle 1 \cong \angle 2$
  3.  $\overline{BD} \cong \overline{BD}$  Reflexive
  4.  $\triangle ABD \cong \triangle CBD$  SAS
- $\angle A \cong \angle C$  corresponding parts of  $\cong \Delta$ 's

Base Angles Thm

If  $\overline{AB} \cong \overline{CB}$   
 then  $\angle A \cong \angle C$

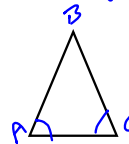
If two sides of a triangle are congruent then the angles opposite them are also congruent



Base Angles Thm Converse

If two angles in a triangle are congruent then the sides opposite of them are also congruent

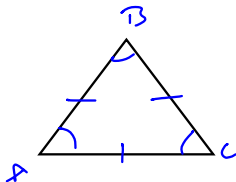
If  $\angle A \cong \angle C$   
 then  $\overline{AB} \cong \overline{CB}$



Using Base angles

If the  $\Delta$  is equilateral then it is equiangular

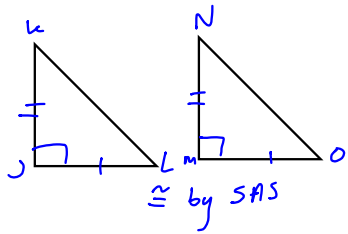
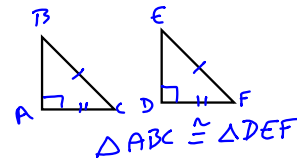
If the  $\Delta$  is equiangular then it is equilateral



Ways to prove triangles are congruent

- Show All 3 sides, All 3  $\angle$ 's are  $\cong$
- SSS All sides
- SAS 2 sides and the included angle
- ASA 2 angles and the included side
- AAS 2 angles and the nonincluded side

H-L (Hypotenuse Leg)  $\cong$  Thm  
 IF the hypotenuse and leg  
 of a right  $\Delta$  are congruent  
 to the hypotenuse and leg of  
 another triangle  
 then the triangles are congruent



⌀239-241  
 2-36 even