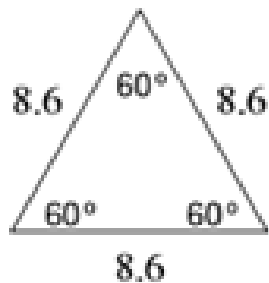


Do Now:

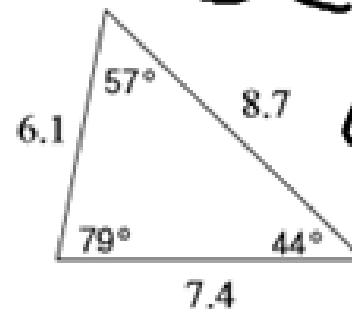
Classify each triangle by each angles and sides.

7)



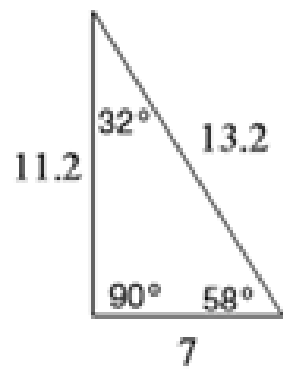
equilateral
equiangular

8)



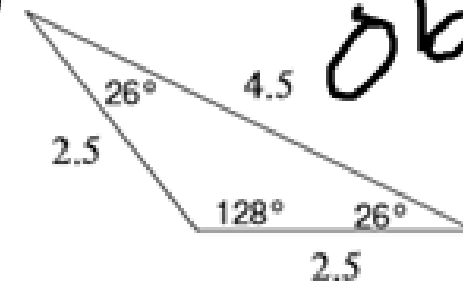
Scalene
acute

9)



scalene
right

10)



Isosceles
obtuse.

Sides
equilateral
Scalene.
Isosceles

Angles
right.
equiangular
obtuse.
acute.

4.6 Use Congruent Triangles

Prove: $\triangle C \cong \triangle F$



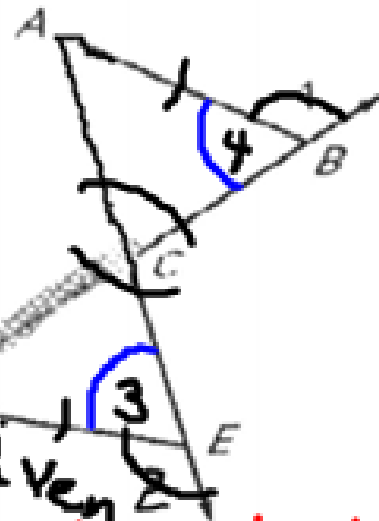
If two triangles are congruent, then their corresponding sides and angles are congruent, by the definition of congruent figures

$$\begin{array}{l|l} \triangle ABC \cong \triangle DEF & \begin{array}{l} \text{ASA} = \text{ASA} \\ \text{CPCTC} \end{array} \\ \triangle C \cong \triangle F & \end{array}$$

CPCTC = Corresponding Parts of Congruent Triangles are Congruent

Example 1 Given $\angle 1 \cong \angle 2, \overline{AB} \cong \overline{DE}$

Prove $\overline{DC} \cong \overline{AC}$



Statements

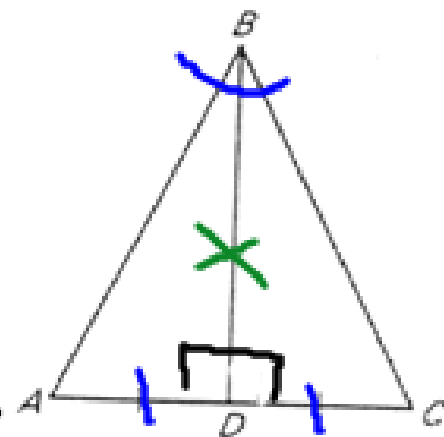
Reasons

① $\angle 1 \cong \angle 2, \overline{AB} \cong \overline{DE}$	① Given
② $\angle 2 + \angle 3$ are supp. $\angle 1 + \angle 4$ are supp.	② 2 angles that form a l.i.p. are supplementary.
③ $\angle 3 \cong \angle 4$	③ Supplements of \cong \angle 's are \cong
④ $\angle DCE$ & $\angle BCA$ are vertical angles	④ Def of vertical \angle 's
⑤ $\angle DCE \cong \angle BCA$	⑤ Vertical angles are \cong
⑥ $\triangle DEC \cong \triangle BAC$	⑥ AAS \cong AAS
⑦ $\overline{DC} \cong \overline{AC}$	⑦ CPCTC

Example #2

Given: $\overline{AD} \cong \overline{DC}$, $\overline{BD} \perp \overline{AC}$

Prove: $\angle ABD \cong \angle CBD$



Statements

Reasons

① $\overline{AD} \cong \overline{DC}$
 $\overline{BD} \perp \overline{AC}$

① Given

② $\overline{BD} \cong \overline{BD}$

② Reflexive Property

③ $\angle ADB$ & $\angle CDB$
are r. \angle 's

③ \perp lines form right angles.

④ $\angle ADB \cong \angle CDB$

④ All right \angle 's are \cong

⑤ $\triangle ADB \cong \triangle CDB$

⑤ SAS \cong SAS.

⑥ $\angle ABD \cong \angle CBD$

⑥ CPCTC

Worksheet