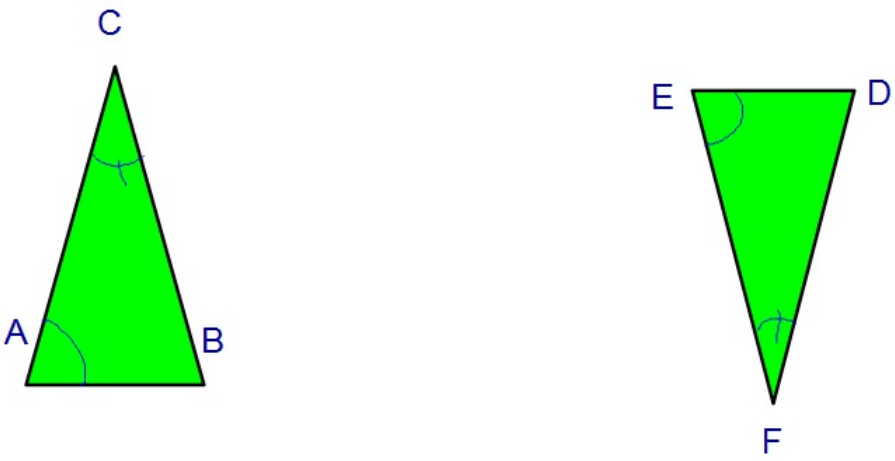
*Get in your assigned seat.

*Complete the following:

If $\angle A \cong \angle E$ and $\angle C \cong \angle F$

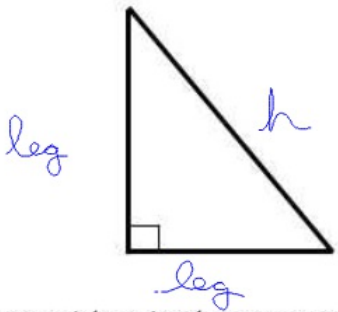
What 2 sides must be congruent to prove ΔABC congruent to ΔDEF? Explain.



Name_____

Congruence in Right Triangles

- In a right triangle, the side opposite the right angle is called the hypotenuse. It is the longest side in the triangle. The other two sides are called legs.

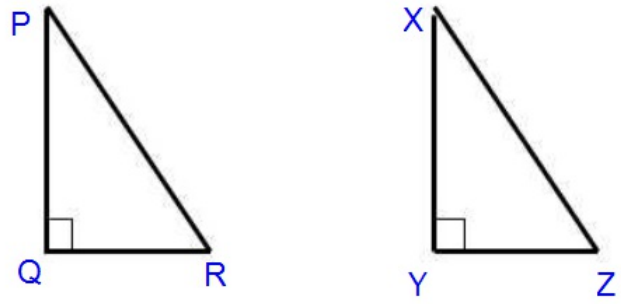


- We will prove right triangles congruent, by using one pair of corresponding sides (legs) and the hypotenuses.

Hypotenuse – Leg Theorem (HL):

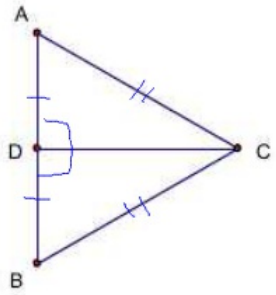
- If hypotenuse and a leg of one right triangle are congruent to the hypotenuse and corresponding leg of another right triangle then the triangles are congruent.

Example:



- If Δ PQR and Δ XYZ are right triangles, $\overline{PR} \cong \overline{YZ}$ and $\overline{QR} \cong \overline{YZ}$, then $\overline{PQ} \cong \overline{XY}$ $\Delta PQR \cong \Delta XYZ$.

Using HL Theorem:

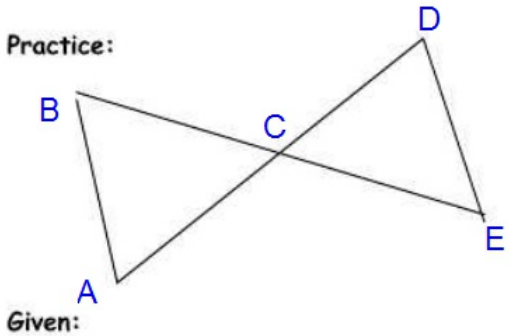


Given: $\overline{CD}$ bisects $\overline{AB}$ at D, $\overline{CD} \perp \overline{AB}$
$\triangle ABC$ is isosceles with vertex angle C

Prove: $\Delta ACD \cong \Delta BCD$

Statement	Reason
① $\overline{CD}$ bisects $\overline{AB}$ at D, $\overline{CD} \perp \overline{AB}$, $\triangle ABC$ is isosceles w/ vertex $\angle C$	① Given
② $\overline{AD} \cong \overline{BD}$	② Def bisect
③ $\overline{AC} \cong \overline{BC}$	③ Def isosc $\triangle$
④ $\angle ADC = \angle BDC = 90$	④ Def perpendicular
⑤ $\angle ADC$, $\angle BDC$ are right $\angle$s	⑤ perpendiculars form rt $\angle$s.
⑥ $\Delta ACD \cong \Delta BCD$	⑥ HL

Practice:



Given:

Proven: