Warm Up

ON HALF SHEET:

Write the formula that was used in the video for today.

SECTION 3.8- THE HL POSTULATE

Proving Δ's ≅

AAS

SAS

SSS

ASA

Why Do You Need To Know This?

- Let's say you need to prove triangles congruent - what postulates can you use?

  SSS, SAS, ASA or AAS
- But suppose there is not enough information for any of those!
- Now you're stuck right?
- .....WRONG!
- The Hypotenuse Leg Postulate is another method of proving triangles congruent ☺

What is the HL Postulate?

H - Hypotenuse (longest side of a rt Δ)

L - Leg (side that isn't hypotenuse)

Δ's must be right Δ's

$a^2 + b^2 = c^2$

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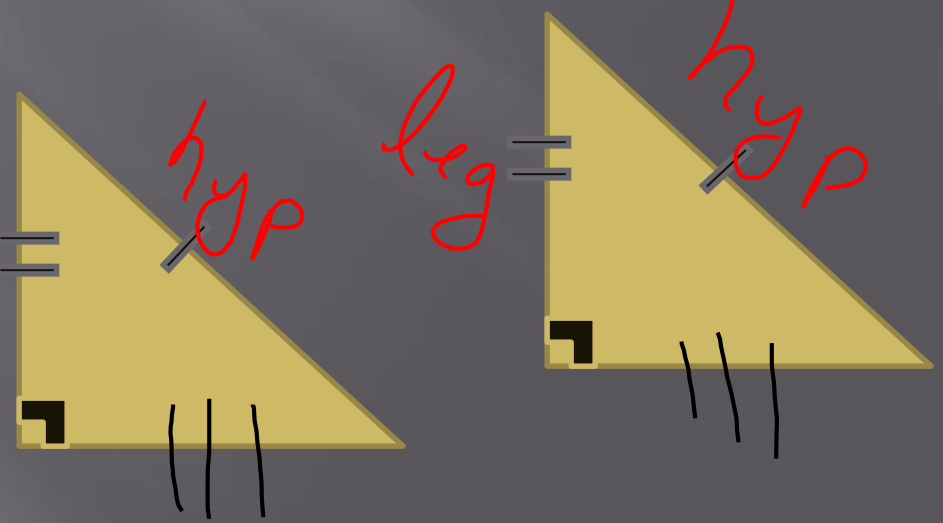
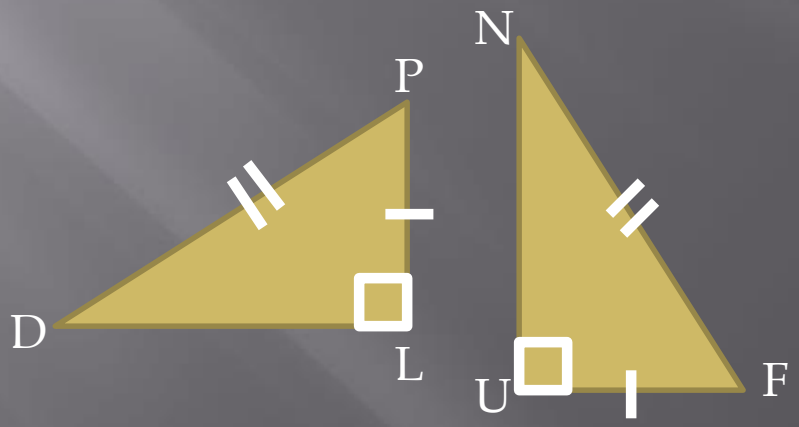


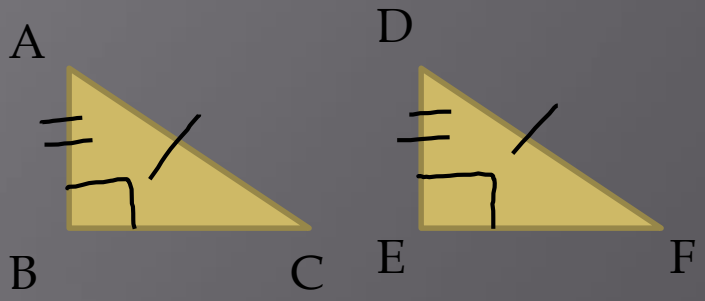
How and When to Use It

- The HL Postulate only works with **right triangles**.
- When used in a proof, you must first establish the two are right triangles.
- Then, you get the legs and hypotenuses congruent and you're done!



$\Delta PLD \cong \Delta FUN$

Sample Problem



Given: $\overline{AB} \perp \overline{BC}$

$\overline{DE} \perp \overline{EF}$

$\overline{AB} \cong \overline{DE}$

$\overline{AC} \cong \overline{DF}$

Prove: $\Delta ABC \cong \Delta DEF$

$\overline{AB} \perp \overline{BC}$	
$\overline{DE} \perp \overline{EF}$	
$\overline{AB} \cong \overline{DE}$ ✓	
$\overline{AC} \cong \overline{DF}$ ✓	
⑤ $\angle ABC$ & $\angle DEF$ are rt $\angle$'s	⑤ $\perp$ lines form rt $\angle$'s
⑥ ΔABC & ΔDEF are rt Δ's	⑥ If a Δ has a rt $\angle$, then it is a rt Δ.
⑦ $\Delta ABC \cong \Delta DEF$	⑦ HL

Given