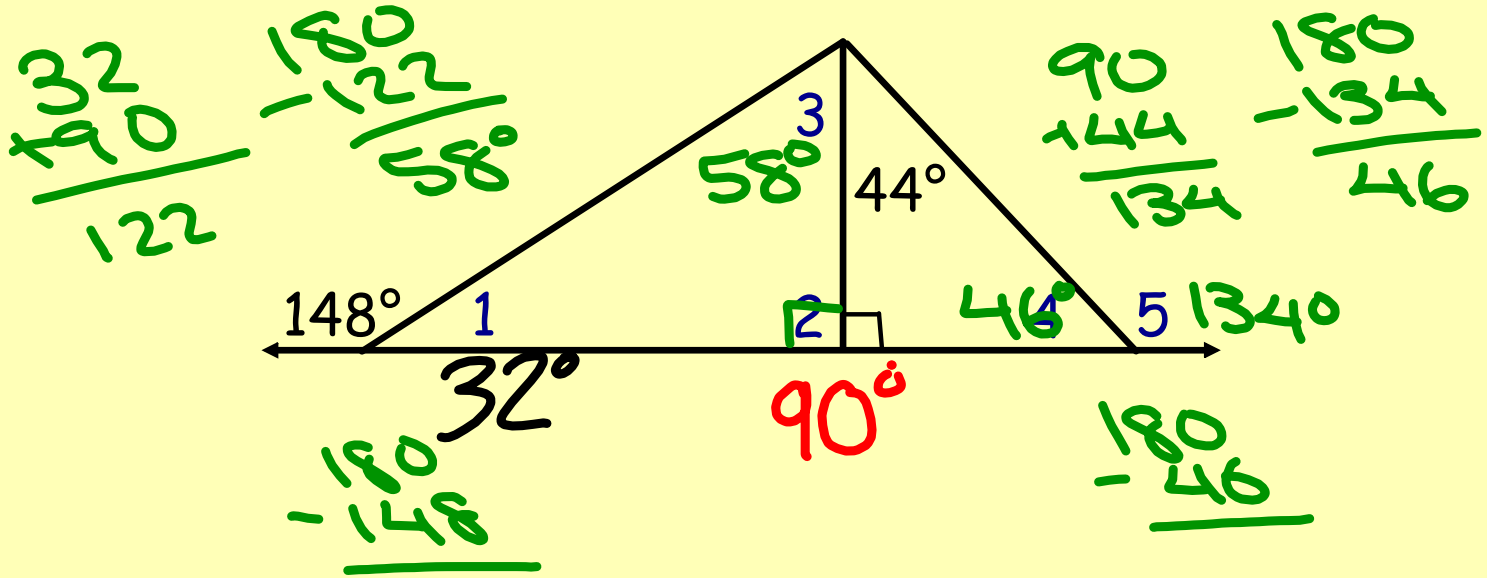
11/5/19 - Warm Up Problem

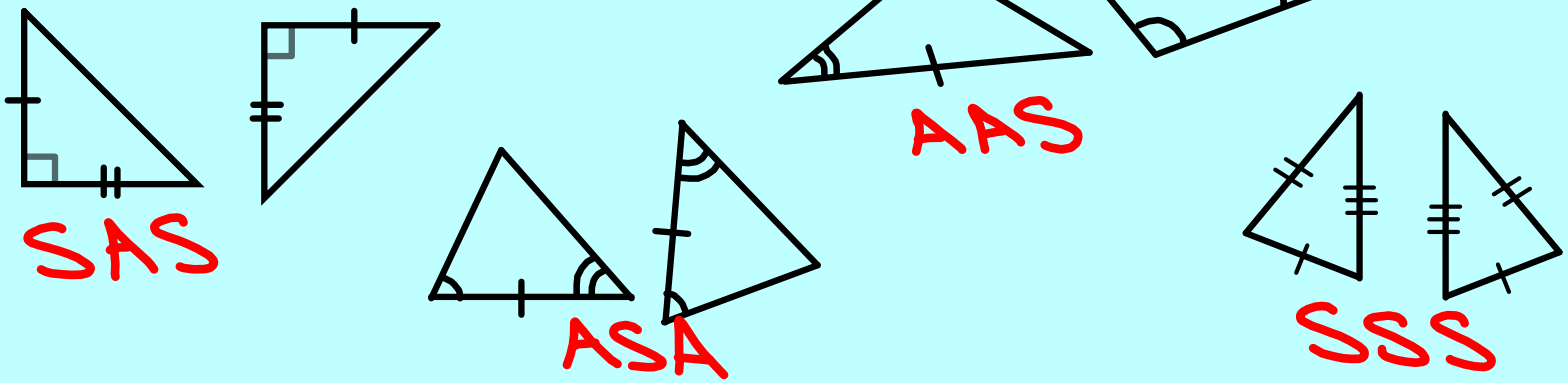
Find the measure of each numbered angle.



Concept 10 - Congruent Triangles

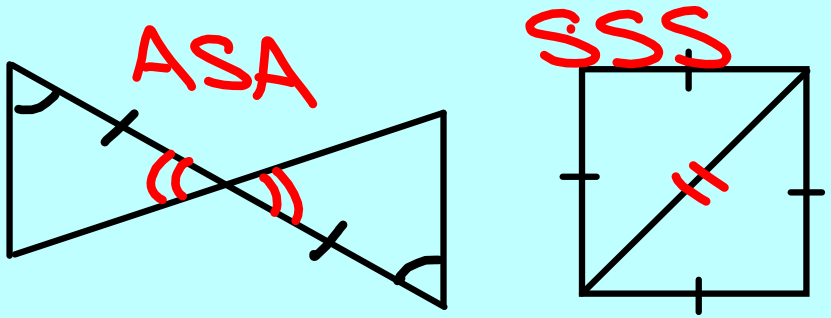
Goal: Prove that triangles are congruent using SSS, SAS, ASA, AAS, and HL

Which shortcut postulate or theorem proves each pair of triangles is congruent?



Remember: Not all congruent parts will be marked on the diagram!

Things to look for:
- Vertical Angles
- Sides that are shared



SSS

SAS

ASA

AAS

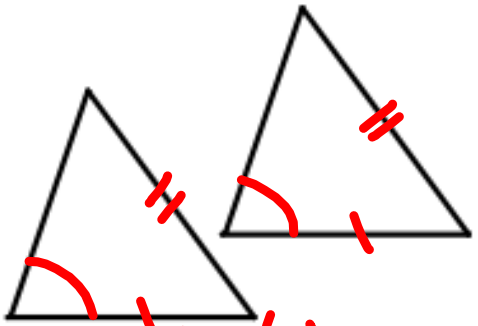
What combinations are we missing?

SSA / ASS

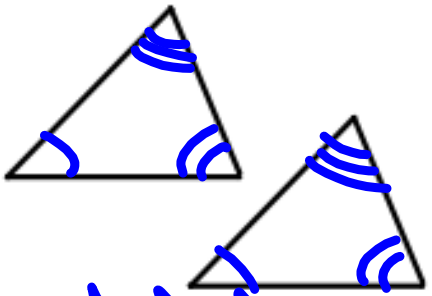
AAA

THE BAD TRIANGLE PROOFS

- These two shortcuts have counterexamples and do not prove that triangles are congruent.



SSA / ASS

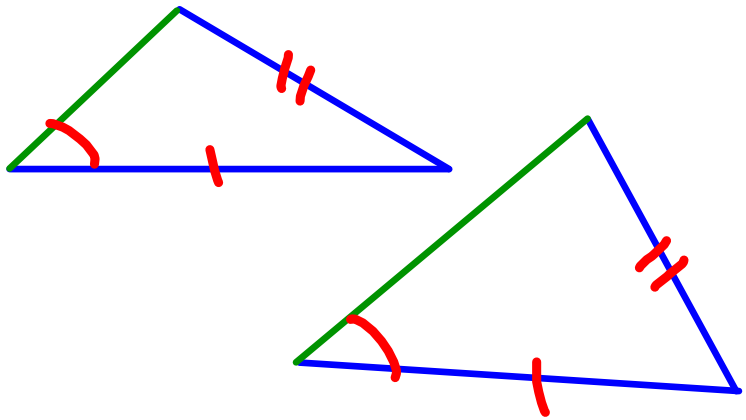


AAA

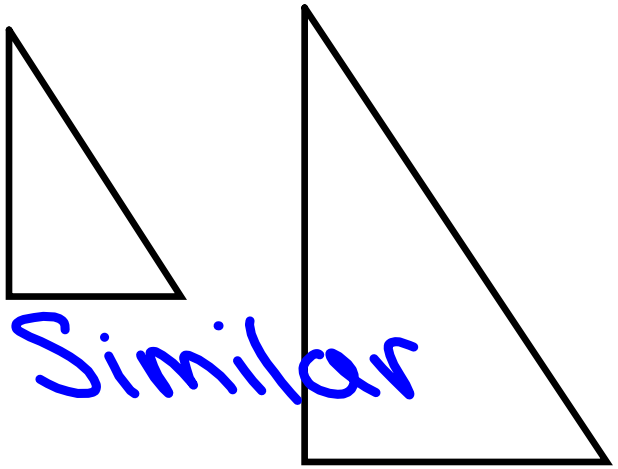
BAD PROOFS - these do not work

ASS - Angle, Side, Side

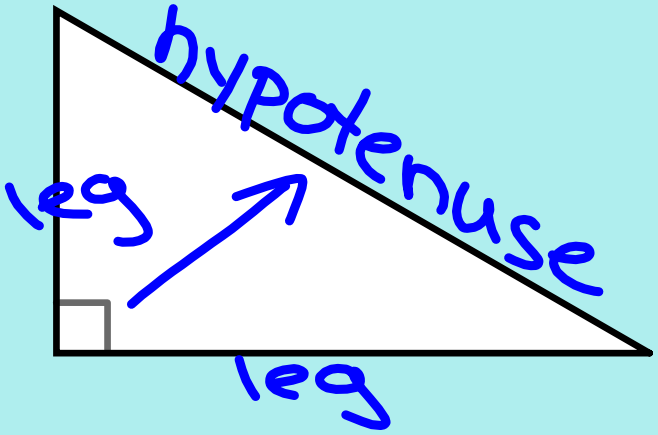
If it spells a bad word,
its a bad proof.



AAA - Angle, Angle, Angle



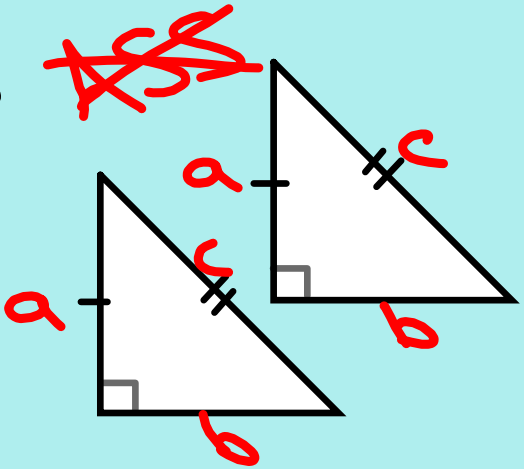
Parts of a Right Triangle



Legs: the sides of the triangle that form the right angle

Hypotenuse: the longest side of the triangle - opposite the right angle

Are these two right triangles congruent?

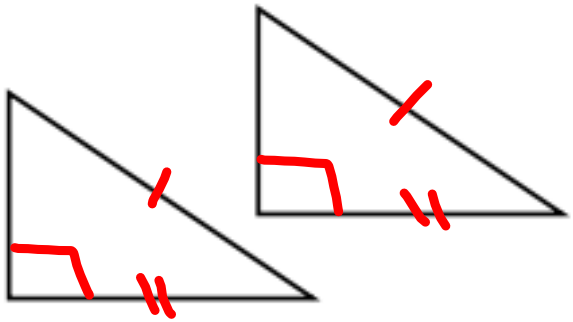


What is always true about the sides of a right triangle?

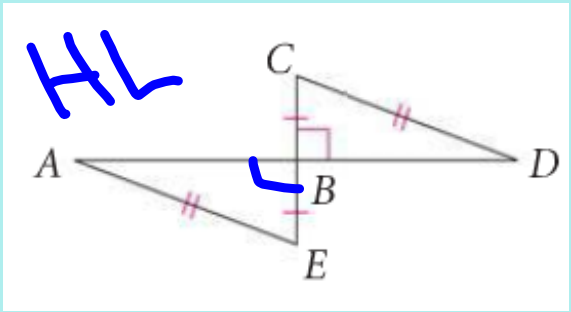
$a^2 + b^2 = c^2$

HYPOTENUSE-LEG THEOREM (HL)

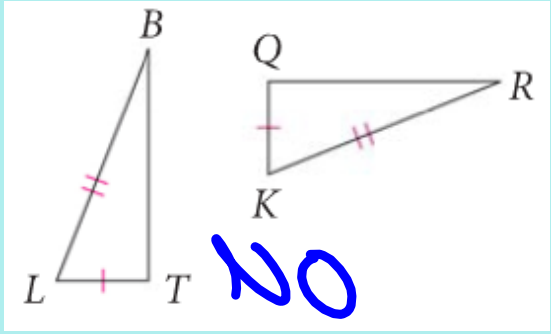
If the hypotenuse and leg of one right triangle is congruent to the hypotenuse and leg of another right triangle, then the triangles are congruent.



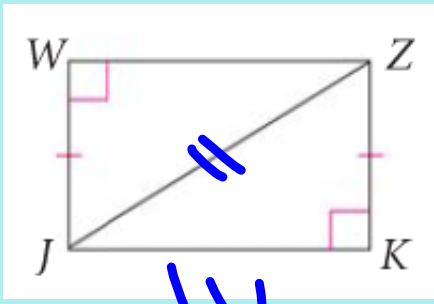
Can you prove each set of triangles is congruent by HL?



HL



NO

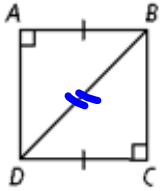


HL

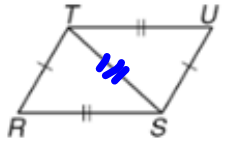
Assignment:

Concept 10 Worksheet (#11-22)

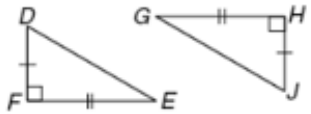
Determine why each pair of triangles is congruent: SSS, SAS, AAS, ASA, or HL. If the triangles cannot be proven congruent, write "not possible."

11. 

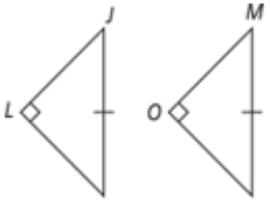
HL

11. 

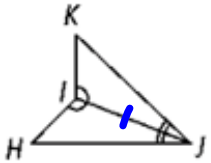
SSS

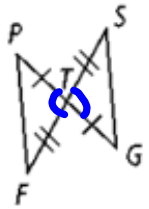
12. 

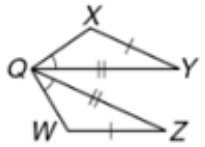
SAS

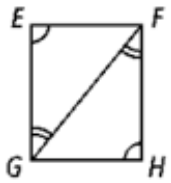
13. 

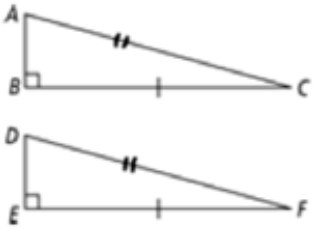
Not Possible

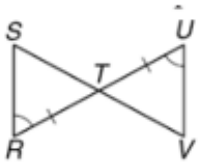
14. 

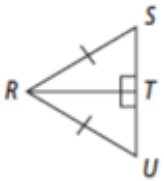
15. 

16. 

17. 

18. 

19. 

20. 

22.