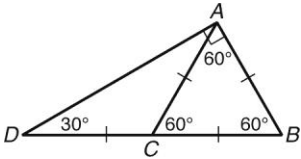


Study Guide: Triangle Congruence – on sections 4.1-4.5 and 5.5

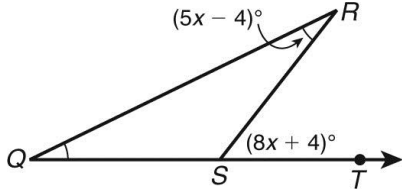
Classify triangles both by their side lengths and their angle measures.



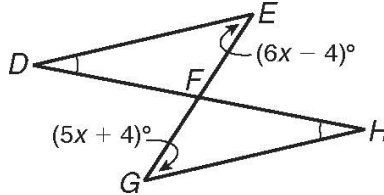
1. Classify  $\triangle ABD$  by its angle measures: \_\_\_\_\_
2. Classify  $\triangle ABC$  by its side lengths: \_\_\_\_\_

Prove and use theorems about triangles, including angle sum, exterior angle, third angles.

3. The measure of the smallest angle of a right triangle is  $27^\circ$ . What is the measure of the remaining angle? \_\_\_\_\_
4. In  $\triangle POW$ , angle P measures  $2x$ , angle O measures  $3x-15$ , and angle W measures  $4x-30$ . Find the actual measures of each angle. \_\_\_\_\_
5. Find the value of  $\angle RST$ . \_\_\_\_\_

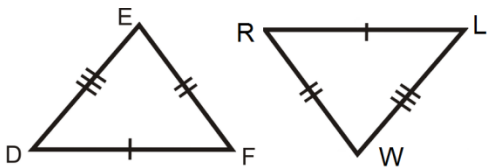


6. Find the measure of  $\angle E$ . \_\_\_\_\_

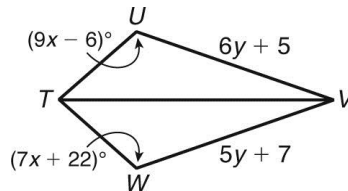


Define congruence in terms of identical and matching parts.

7. Complete the congruence statement:  $\triangle DEF \cong$  \_\_\_\_\_



8.  $\triangle TUV \cong \triangle TWV$ . Find UV. \_\_\_\_\_



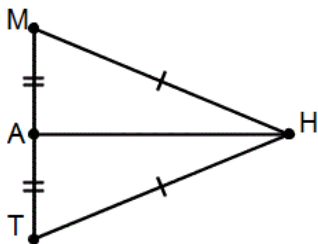
Determine whether 3 given lengths will make a  $\triangle$ . Specify a range of values for the 3rd side of a  $\triangle$  given 2 lengths.

9. Three sides of a triangle measure  $x^2$ ,  $6x-1$ , and  $2x$ . When  $x = 3$ , will the lengths form a triangle? \_\_\_\_\_

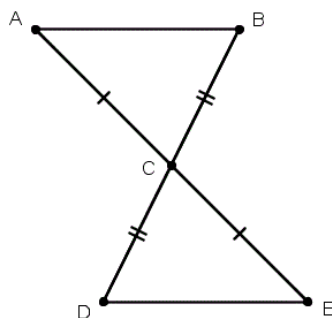
10. Two sides of a triangular frame measure 3.5mm and 11.03mm. What is the range of possible values for the third side? \_\_\_\_\_

Prove triangles congruent using the shortcuts SSS/SAS/ASA/AAS. Recognize that AAA and SSA do not work.

11. Which of the 4 congruence shortcuts can be used to show that  $\triangle MAH \cong \triangle TAH$  ? \_\_\_\_\_



12. Which of the 4 congruence shortcuts can be used to show these triangles below are congruent? \_\_\_\_\_



13. Complete the congruence statement:

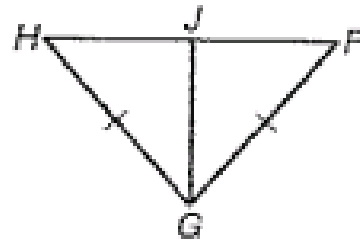
$\triangle ACB \cong$  \_\_\_\_\_

Develop basic geometric proofs using statements and reasons.

14. Fill in the blank for statements and reasons.

Given: J is the midpoint of HF;  $FG \cong HG$ .

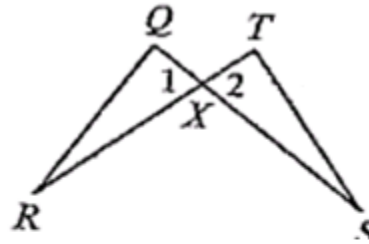
Prove:  $\triangle FGJ \cong \triangle HGJ$



Statements	Reasons
1. J is the midpoint of HF	1. _____
2. $HJ \cong FJ$	2. Def. of midpoint
3. $JG \cong JG$	3. _____
4. $FG \cong HG$	4. Given
5. $\triangle FGJ \cong \triangle HGJ$	5. _____

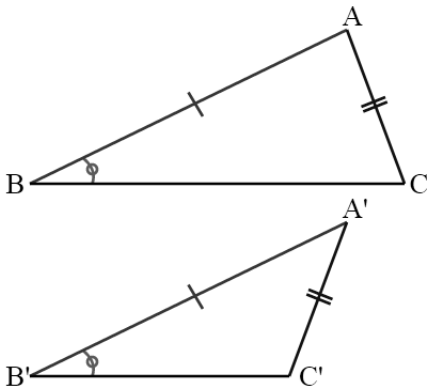
15.

Given:  $\angle Q \cong \angle T$ ;  $\overline{RX} \cong \overline{SX}$ .  
 Prove:  $\triangle RXQ \cong \triangle SXT$ .



Statements	Reasons
1. _____	1. _____
2. $RX \cong SX$	2. _____
3. $\angle 1 \cong \angle 2$	3. _____
4. _____	4. _____

16. Are these triangles congruent? Why or why not?



17. Are these triangles congruent? Why or why not?

