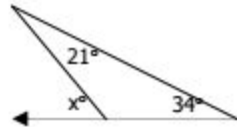


**TOPICS:**

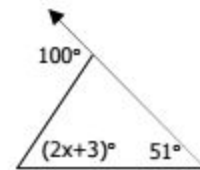
I can state and use the Triangle Sum Theorem and the Exterior Angle Theorem.

- The sum of the measures of the angles of a triangle is \_\_\_\_\_.
- The exterior angle of a triangle is equal to \_\_\_\_\_ of the \_\_\_\_\_ of the triangle.

Solve for x.



13. Solve for

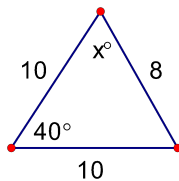


x.

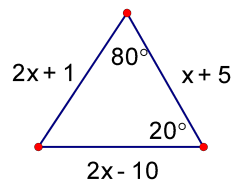
I can state and use the Isosceles Triangle Theorem.

- An isosceles triangle has at least two sides that are \_\_\_\_\_.
- Isosceles Triangle Theorem (ITT): If two \_\_\_\_\_ of a triangle are congruent, then \_\_\_\_\_ are congruent.
- Converse of ITT: If two \_\_\_\_\_ of a triangle are congruent, then \_\_\_\_\_ are congruent.

a. Find x.



b. Find x.

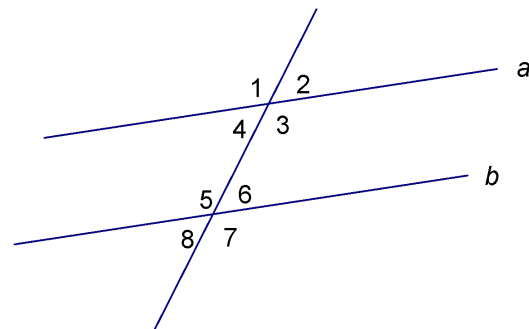


I can identify angle relationships within a transversal and use them to solve problems.

Use the diagram to answer 3 – 4.

6. Name the type of each given angle pair.

- $\angle 3$  and  $\angle 5$
- $\angle 1$  and  $\angle 7$
- $\angle 4$  and  $\angle 8$
- $\angle 8$  and  $\angle 6$
- $\angle 4$  and  $\angle 3$



7. Given:  $a \parallel b$  and  $m\angle 5 = 132^\circ$ . Find the measure of each of the remaining angles.

$m\angle 1 = \underline{\hspace{2cm}}$ ,  $m\angle 2 = \underline{\hspace{2cm}}$ ,  $m\angle 3 = \underline{\hspace{2cm}}$ ,  $m\angle 4 = \underline{\hspace{2cm}}$ ,  
 $m\angle 6 = \underline{\hspace{2cm}}$ ,  $m\angle 7 = \underline{\hspace{2cm}}$ ,  $m\angle 8 = \underline{\hspace{2cm}}$

8. If  $m\angle 1 = (2x + 4)^\circ$  and  $m\angle 7 = (3x - 7)^\circ$ , find  $m\angle 6$ .

**□ I can state and use CPCTC.**

9. CPCTC – If two triangles are congruent, then their corresponding parts (sides and angles) are \_\_\_\_\_.

□ Knowing that corresponding parts are congruent, you can set up and solve equations:

a.  $\triangle ABC \cong \triangle PQR$ ,  $AB = x + y$ ,  $PQ = 2x + 4$ ,  $AC = 4y - 13$ ,  $PR = 2y + x$ . Find  $PQ$ .

b.  $\triangle LMN \cong \triangle XYZ$ ,  $m\angle L = x + 50$ ,  $m\angle N = 40$ ,  $m\angle Y = -2x + 10$ . Find  $m\angle X$ .

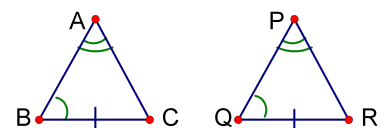
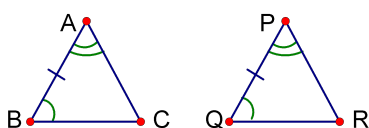
**□ I can state and recognize the Congruence Postulates**

10. The triangle congruence postulates are: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

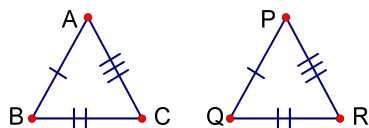
11. The false postulates are: \_\_\_\_\_, \_\_\_\_\_,

- You can identify congruent and noncongruent triangles using the congruence shortcuts.
- If congruent, you can write a congruence statement.
- Each “A” is a pair of congruent Angles, each “S” is a pair of congruent Sides
- To use HL, use must first establish there are right triangles. The “H” represents the hypotenuses and the “L” represents one of the legs from each triangle.
- Don’t forget that triangles can overlap and share angles or sides.
- Vertical angles are congruent.

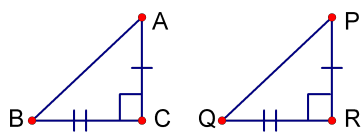
12. . For each of the following, give the reason for triangle congruence. Then, write a congruence statement.



a.  $\triangle ABC \cong$  \_\_\_\_\_ by \_\_\_\_\_

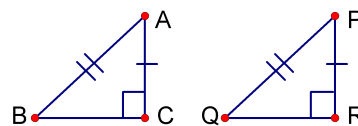


c.  $\triangle CAB \cong$  \_\_\_\_\_ by \_\_\_\_\_



e.  $\triangle ABC \cong$  \_\_\_\_\_ by \_\_\_\_\_

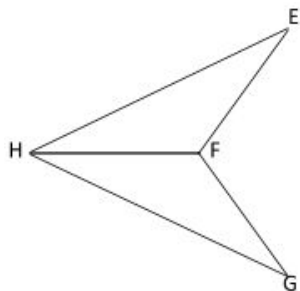
b.  $\triangle BAC \cong$  \_\_\_\_\_ by \_\_\_\_\_



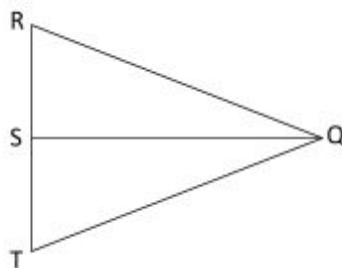
d.  $\triangle CBA \cong$  \_\_\_\_\_ by \_\_\_\_\_

13. The primary focus of this unit was writing flow proofs to prove geometric relationships. **Be sure to study the proofs you have written throughout the unit.**

a. **Given:**  $\angle E \cong \angle G$ ,  
HF bisects  $\angle EHG$   
**Prove:**  $HE \cong HG$



b. **Given:**  $RS \cong TS$ ,  
 $SQ \perp RT$   
**Prove:**  $\triangle RSQ \cong \triangle TSQ$



c. **Given:**  $\angle KMQ \cong \angle KNP$ ,  
 $MK \cong NK$   
**Prove:**  $\triangle MQK \cong \triangle NPK$

