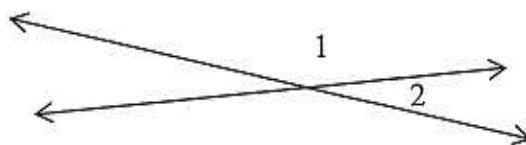


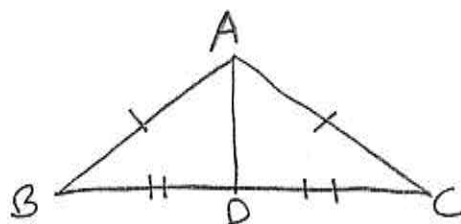
Geometry Benchmark #2
Study Guide

1. If $AB + BC = 30$ and $AB = 12$, what property of equality justifies the conclusion that $BC = 18$?
2. Which theorem or postulate guarantees that $\angle 1 + \angle 2 = 180^\circ$ in the figure?



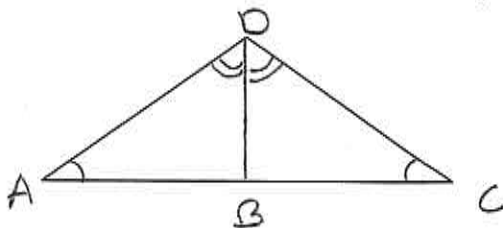
3. Complete the following proof.

Given: $\overline{AB} \cong \overline{AC}$, $\overline{BD} \cong \overline{DC}$
Prove: $\angle BAD = \angle CAD$



Statement	Reason
1. $\overline{AB} \cong \overline{AC}$	1.
2. $\overline{BD} \cong \overline{DC}$	2.
3.	3. Reflexive Property
4. $\triangle ADB \cong \triangle ADC$	4.
5. $\angle BAD = \angle CAD$	5.

4. What theorem or postulate can be used to prove $\triangle ABD \cong \triangle CBD$?

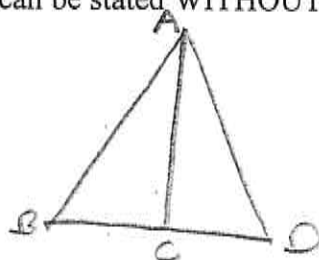


5. Find x .



$$\begin{aligned} AB &= x - 3 \\ BC &= 3x + 8 \\ AC &= 2x + 11 \end{aligned}$$

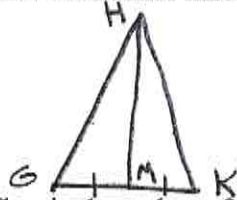
6. What can be stated WITHOUT proof?



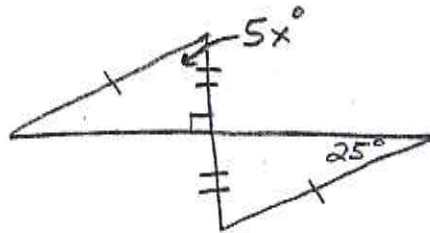
7. In the figure, $PQ = QR = RS$, and $PS = 30$. Find PR .



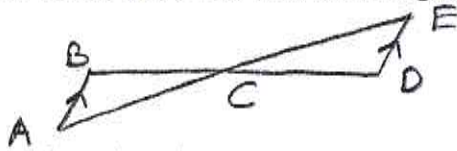
8. What additional information is needed to prove that $\triangle GHM \cong \triangle KHM$?



9. What is the value of x ?



10. Given that $\overline{AB} \parallel \overline{DE}$, what angles can you prove congruent?



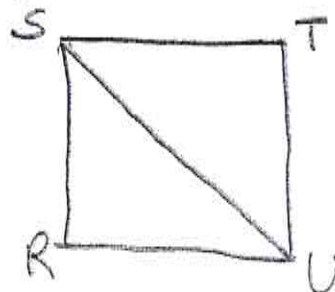
11. Complete the proof.

Statement	Reason
$\angle CAB \cong \angle FDE$	Given
$\overline{AB} \cong \overline{DE}$	Given
$\angle ABC \cong \angle DEF$	All right \angle 's are \cong
$\triangle ABC \cong \triangle DEF$	

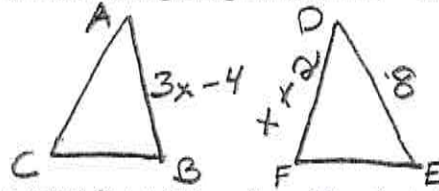
12. The figure below shows triangle ABC with altitude AD drawn to base BC. What statements can you make from that information?



13. The following figure is a square. Which triangle congruence theorem can be used to prove $\triangle RSU \cong \triangle TSU$?



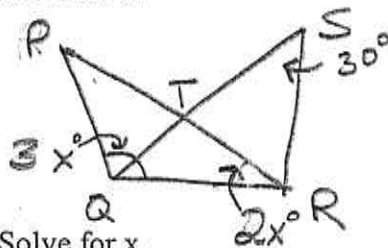
14. In the following diagram, $\triangle ABC \cong \triangle DFE$. What is the value of x ?



15. If $\triangle ABC \cong \triangle ACB$ and $m\angle B = (x + 5)$ and $m\angle C = (2x - 10)$. Solve for x .

16. Which triangle congruence theorem applies only to right triangles?

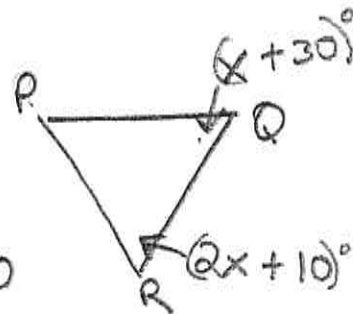
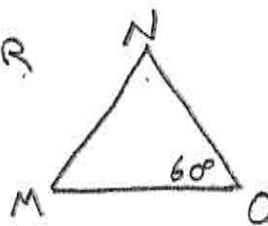
17. Solve for x .



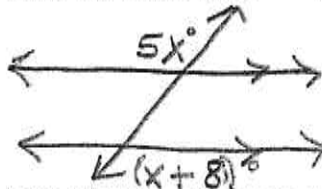
$$\triangle PRQ \cong \triangle SQR$$

18. Solve for x .

$$\triangle MNO \cong \triangle PQR$$



19. Find the value of x .



20. List all pairs of congruent angles.

