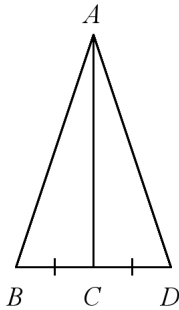


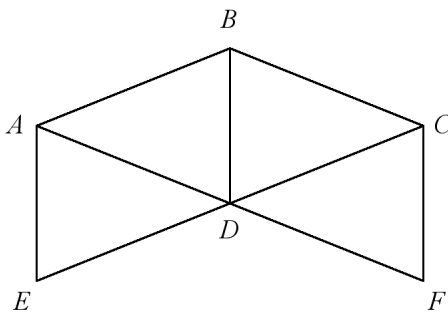
Study Guide for Quiz 4.5-4.7

Short Answer

1. Given $\triangle QRS \cong \triangle TUV$, $QS = 3v + 2$, and $TV = 7v - 6$, find the length of QS and TV .
2. Given $\triangle ABC \cong \triangle PQR$, $m\angle B = 3v + 4$, and $m\angle Q = 8v - 6$, find $m\angle B$ and $m\angle Q$.
3. What other information do you need in order to prove the triangles congruent using the SAS Congruence Postulate?



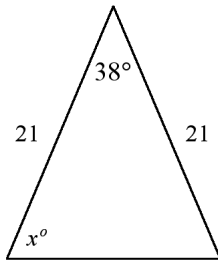
4. Which two triangles are congruent by ASA?
 \overline{AF} bisects \overline{EC} , and $\angle AED \cong \angle FCD$.



Name: _____

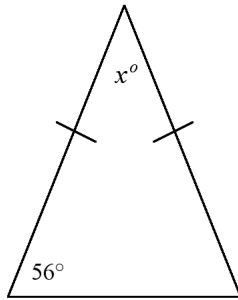
ID: A

5. What is the value of x ?



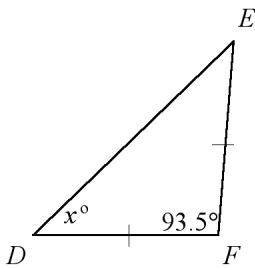
Drawing not to scale

6. What is the value of x ?



Drawing not to scale

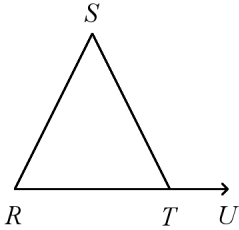
7. What is the value of x ?



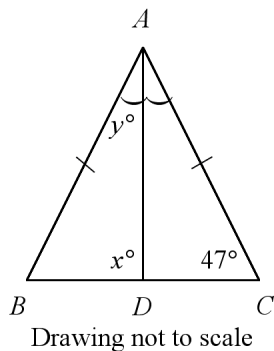
Drawing not to scale

8. Find the value of x . The diagram is not to scale.

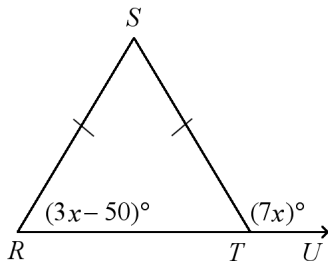
Given: $\overline{RS} \cong \overline{ST}$, $m\angle RST = 7x - 54$, $m\angle STU = 8x$



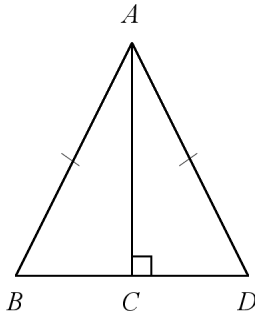
9. Two sides of an equilateral triangle have lengths $2x - 2$ and $3x - 6$. Which could be the length of the third side: $10 - x$ or $6x + 5$?
10. The legs of an isosceles triangle have lengths $2x + 4$ and $x + 8$. The base has length $5x - 2$. What is the length of the base?
11. Find the values of x and y .



12. In an A-frame house, the two congruent sides extend from the ground to form a 34° angle at the peak. What angle does each side form with the ground?
13. Find the value of x . The diagram is not to scale.

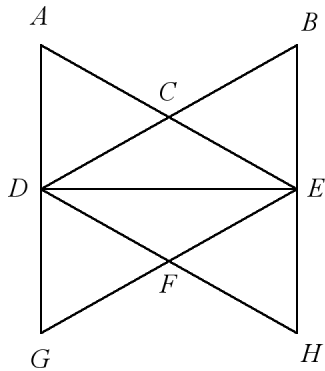


14. Is there enough information to conclude that the two triangles are congruent? If so, what is a correct congruence statement?

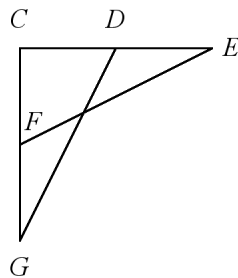


15. \overline{CB} is a perpendicular bisector to \overline{AD} at B between A and D . $\angle DAC \cong \angle ADC$. By which of the five congruence statements, HL, AAS, ASA, SAS, and SSS, can you immediately conclude that $\triangle ABC \cong \triangle DBC$?

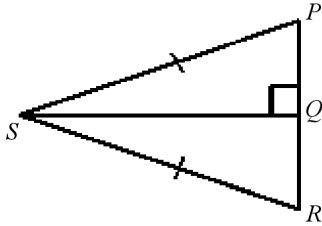
16. What common side do $\triangle DHB$ and $\triangle DEB$ share?



17. What common angle do $\triangle CDG$ and $\triangle FCE$ share?



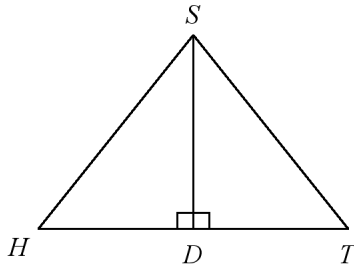
18. Is $\triangle PQS \cong \triangle RQS$ by HL? If so, name the legs that allow the use of HL.



19. Complete the proof by providing the missing reasons.

Given: $SD \perp HT$; $\overline{SH} \cong \overline{ST}$

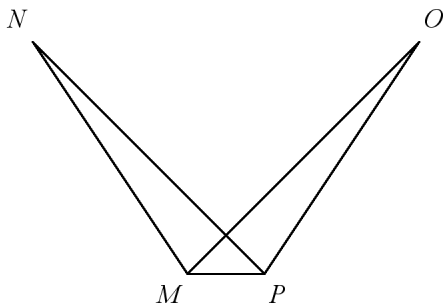
Prove: $\triangle SHD \cong \triangle STD$



Statement	Reason
1. $SD \perp HT$	1. Given
2. $\angle SDH$ and $\angle SDT$ are right \angle s	2. <u>?</u>
3. $\overline{SH} \cong \overline{ST}$	3. <u>?</u>
4. <u>?</u>	4. Reflexive Property
5. $\triangle SHD \cong \triangle STD$	5. <u>?</u>

20. Name a pair of triangles in the figure and state whether they are congruent by SSS, SAS, ASA, AAS, or HL.

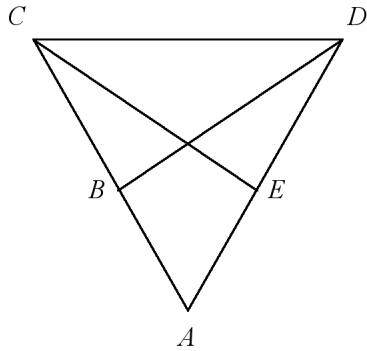
Given: $\overline{NP} \cong \overline{OM}$, $\overline{MN} \cong \overline{PO}$



21. Complete the proof by providing the missing reasons.

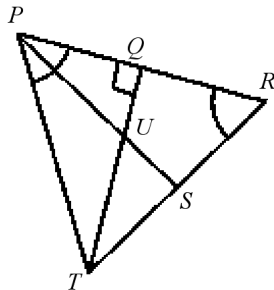
Given: $\overline{CB} \perp \overline{BD}$, $\overline{DE} \perp \overline{EC}$, $\overline{CB} \cong \overline{DE}$

Prove: $\triangle DBC \cong \triangle CED$



Statement	Reason
1. $\overline{CB} \cong \overline{DE}$, $\overline{CB} \perp \overline{BD}$, and $\overline{DE} \perp \overline{EC}$	1. Given
2. $\angle CBD$ and $\angle DEC$ are right angles	2. Definition of perpendicular segments
3. $\angle CBD \cong \angle DEC$	3. <u>?</u>
4. $\overline{CD} \cong \overline{CD}$	4. <u>?</u>
5. $\triangle DBC \cong \triangle CED$	5. <u>?</u>

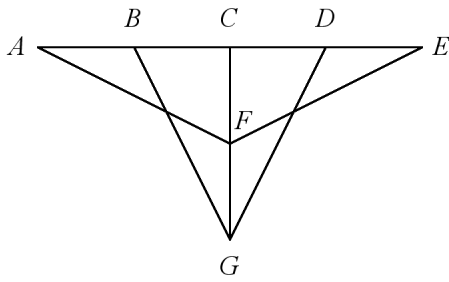
22. Determine which triangles in the figure are congruent by AAS.



Name: _____

ID: A

23. Separate and redraw $\triangle ACF$ and $\triangle GCB$. Identify any common angles or sides.



Study Guide for Quiz 4.5-4.7

Answer Section

SHORT ANSWER

1. 8
2. 10
3. $\overline{AC} \perp \overline{BD}$
4. $\triangle ADE$ and $\triangle FDC$
5. 71°
6. 68°
7. 43.25°
8. 14
9. $10 - x$ only
10. 18
11. $x = 90, y = 43$
12. 73
13. $x = 23$
14. Yes; $\triangle ACB \cong \triangle ACD$.
15. HL and AAS
16. \overline{BD}
17. $\angle C$
18. Yes, \overline{QS} (in each triangle)
19. **2.** Definition of \perp lines
3. Given
4. $\overline{SD} \cong \overline{SD}$
5. HL Theorem
20. $\triangle MNP \cong \triangle POM$ by SSS
21. Step 3: All right angles are congruent.
 Step 4: Reflexive Property
 Step 5: HL Theorem
22. $\triangle PQT \cong \triangle RQT$

23. Angle C is common to both $\triangle ACF$ and $\triangle GCB$.

