

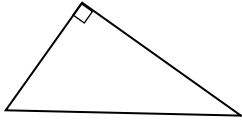
Name: _____ Date: _____ Per: _____

Geometry Chapter 5 Review – PS 5: Congruent Triangles

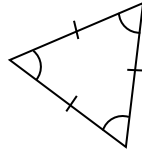
Show all work for full credit.

Classify each triangle by its angles and by its sides.

1. _____



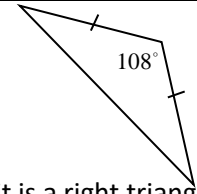
2. _____



3. _____

$45^\circ, 45^\circ, x^\circ$

4. _____



Use the distance formula to classify each triangle by its sides, and then justify whether it is a right triangle.

5. P(-3, 4), Q(5, 0), R(-6, -2)

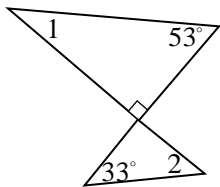
6. P(-1, 2), Q(4, 1), R(0, -1)

5. _____

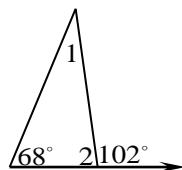
6. _____

Use the angle measurements shown to solve for each variable or numbered angle. (Show steps)

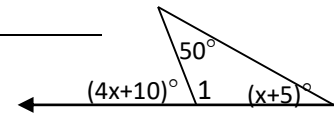
7. _____



8. _____



9. _____



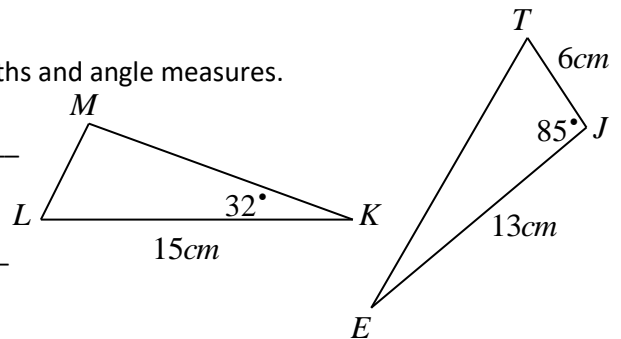
In the diagram, $\triangle MKL \cong \triangle JET$. Find the missing side lengths and angle measures.

10. $m\angle M =$ _____

11. $m\angle T =$ _____

12. $MK =$ _____

13. $TE =$ _____

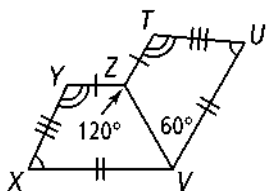


14. Use the congruence statement, $\triangle SAT \cong \triangle GRE$, to complete each of the following:

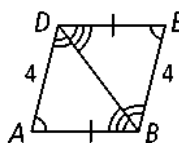
- a. $\angle S \cong$ _____ b. $\overline{GR} \cong$ _____ c. $\angle E \cong$ _____
 d. $\triangle ERG \cong$ _____ e. $\triangle REG \cong$ _____ f. $\overline{EG} \cong$ _____

Identify whether the figures shown are congruent by the definition of congruence. Complete the congruence statement for each pair of figures that are congruent, otherwise write "Not Congruent".

15. $\triangle XYZ \cong$ _____

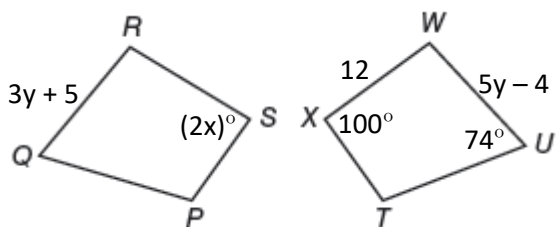


16. $\triangle ABD \cong \triangle$ _____



17. Given $PQRS \cong TUVX$, find the value of each variable.

$x =$ _____ $y =$ _____



Decide whether enough information is given to prove that the triangles are congruent.

If there is not enough information write, "Not Congruent". If there is enough information:

- State the congruence postulate or theorem you would use (SSS, SAS, ASA, AAS, or HL)
- Write/Complete the congruence statement to show which triangles are congruent

18. _____ makes $\triangle ABE \cong \triangle$ _____

19. _____ makes $\triangle ABD \cong \triangle$ _____

20. _____ makes $\triangle ABD \cong \triangle$ _____

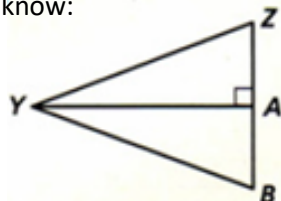
21. _____ makes \triangle _____ $\cong \triangle$ _____

22. _____ makes $\triangle AEL \cong \triangle$ _____

23. _____ makes $\triangle TJE \cong \triangle$ _____

24-25: You would like to prove $\triangle YAB$ is congruent to $\triangle YAZ$. What additional piece of information would you need to use the given congruency postulate/theorem to prove $\triangle YAB \cong \triangle YAZ$?

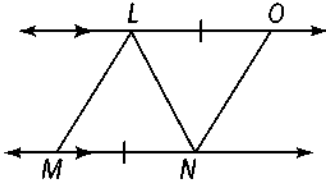
24. To use SAS, we would also need to know:



25. To use AAS, we would also need to know:

26. Given: $\overline{LO} \cong \overline{MN}$, $\overleftrightarrow{LO} \parallel \overleftrightarrow{MN}$

Prove: $\triangle MNL \cong \triangle OLN$



Statement

Reasoning

1. $\overline{LO} \cong \overline{MN}$

1.

2.

2. Given

3. $\angle MNL \cong \angle ______$

3.

4.

4. Reflexive Property of Congruence

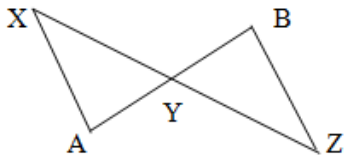
5. $\triangle MNL \cong \triangle OLN$

5.

27. Given: \overline{AB} bisects \overline{XZ}

and $\angle X \cong \angle Z$

Prove: $\triangle AXY \cong \triangle BZY$



Statement

Reasoning

1. \overline{AB} bisects \overline{XZ}

1.

2.

2.

3.

3. Given

4.

4.

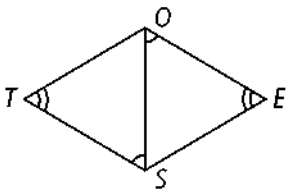
5. $\triangle AXY \cong \triangle BZY$

5.

28. Given: $\angle T \cong \angle E$, $\angle EOS$

$\cong \angle OST$ (Use as many steps as needed)

Prove: $\overline{TO} \cong \overline{ES}$



Statement

Reasoning

1.

1.

2.

2.

3.

3.

4.

4.

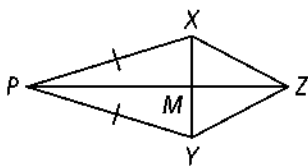
5.

5.

29. Given: $\overline{PX} \cong \overline{PY}$ and

\overline{ZP} bisects \overline{XY}

Prove: $\triangle PXZ \cong \triangle PYZ$



Statement

Reasoning

1. $\overline{PX} \cong \overline{PY}$, \overline{ZP} bisects \overline{XY}

1. Given

2.

2.

3.

3.

4. $\triangle PXM \cong \triangle PYM$

4.

5.

5.

6.

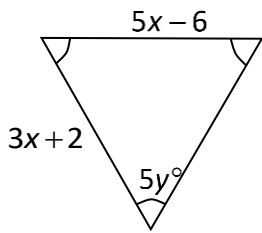
6.

7. $\triangle PXZ \cong \triangle PYZ$

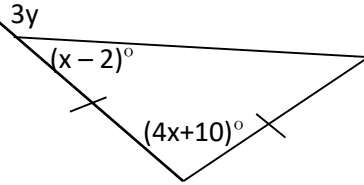
7.

Find the value of each variable.

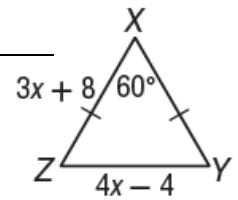
30. _____



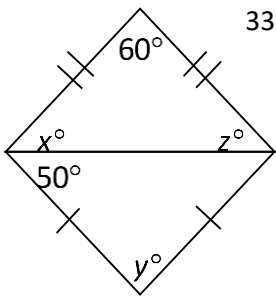
31. _____



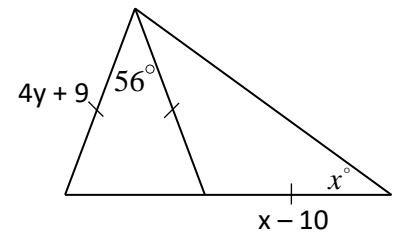
32. _____



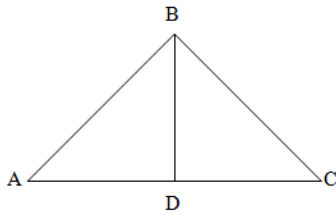
33. _____



34. _____



35. Given: $\overline{BD} \perp \overline{AC}$; $\overline{AB} \cong \overline{BC}$
 Prove: $\triangle ABD \cong \triangle CBD$



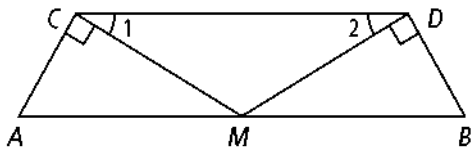
Statement

Reasoning

- 1.
- 2.
- 3.
- 4.
- 5.

- 1.
- 2.
- 3.
- 4.
- 5.

36. Given: M is the midpoint of \overline{AB} ,
 $\overline{MC} \perp \overline{AC}$, $\overline{MD} \perp \overline{BD}$, $\angle 1 \cong \angle 2$
 Prove: $\triangle ACM \cong \triangle BDM$



Statement

Reasoning

1. M is the midpoint of \overline{AB}
- 2.
3. $\overline{MC} \perp \overline{AC}$ and $\overline{MD} \perp \overline{BD}$
- 4.
- 5.
- 6.
- 7.

- 1.
- 2.
3. Given
4. Right Angle Congruence Theorem
5. Given
6. Converse of the Base Angles Th.
- 7.