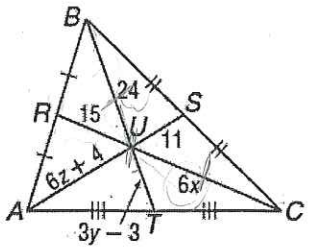
**Chapter 5 Review**
**Geometry**

**Name** Answer Key

1. Points R, S, and T are the midpoints of $\overline{AB}, \overline{BC}$ and $\overline{AC}$, respectively. Find x, y, and z.

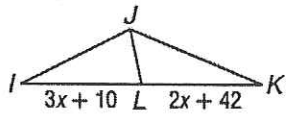



$6x = 30$
$x = 5$

$6z + 4 = 22$
$6z = 18$
$z = 3$

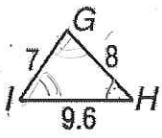
$12 = 3y - 3$
$15 = 3y$
$5 = y$

2. If $\overline{JL}$ is a median for $\Delta IJK$, find x.



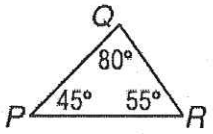

$3x + 10 = 2x + 42$
$x = 32$

3. List the angles of $\Delta GHI$ in order from least to greatest measure.



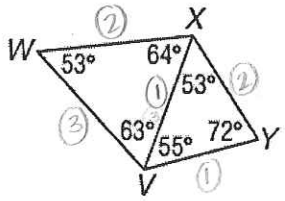

$\angle H, \angle I, \angle G$

4. List the sides of $\Delta PQR$ in order from shortest to longest.




$\overline{QR}, \overline{QP}, \overline{PR}$

5. Name the shortest and the longest segments.

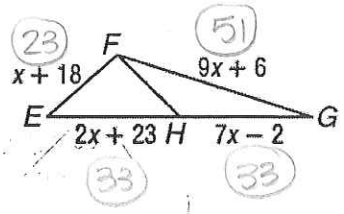



Longest: $\overline{WV}$
Shortest: $\overline{VY}$

6. Write the assumption you would make to begin an indirect proof of the statement *If 2x + 6 = 12, then x = 3.*

$x \neq 3$

7. If $\overline{FH}$ is a median of $\Delta EFG$, find the perimeter of $\Delta EFG$.



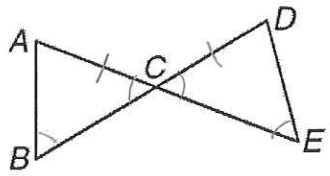

$2x + 23 = 7x - 2$
$25 = 5x$
$5 = x$

perimeter $= 140$

8. Write an indirect proof for the following.

**Given:** $\overline{AB} \cong \overline{DE}$ and $\overline{AC} \cong \overline{CD}$

**Prove:** $\angle B \ncong \angle E$




Assume $\angle B \cong \angle E$

$\angle ACB \cong \angle ECD$ by vertical $\angle$s Thm

$\triangle ACB \cong \triangle ECD$ by AAS

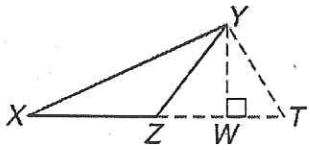
$\overline{AB} \cong \overline{DE}$ by CPCTC

This contradicts the given, so the assumption is false.

Therefore, $\angle B \ncong \angle E$

9. Name the shortest distance from Y to $\overleftrightarrow{XZ}$

$\overline{YW}$




10. Write an indirect proof for the following:

**Given:** $3x - 10 > 20$

**Prove:** $x > 10$

Assume $x \leq 10$

$3x \leq 30$

$3x - 10 \leq 20$

This contradicts the given, so the assumption is false.

Therefore, $x > 10$.

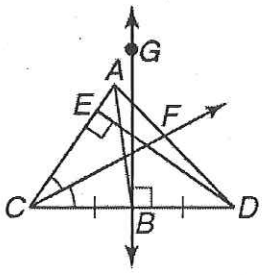
**#11-14 Use the figure at the right.**

11. Name an altitude. $\overline{DE}$

12. Name a perpendicular bisector. $\overline{GB}$

13. Name an angle bisector. $\overline{CF}$

14. Name a median. $\overline{AB}$



17. Which can be lengths of a triangle?

a. 12, 9, 4

b. 1, 2, 3

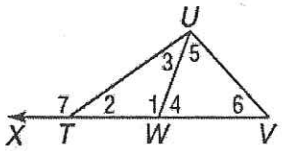
c. 5, 5, 10

d. $\sqrt{2}, \sqrt{5}, \sqrt{18}$

**#18-19 Use the figure at the right and list all angles that satisfy the stated condition.**

18. All angles whose measures are greater than $m\angle 1$.

$\angle 7$




19. All angles whose measures are less than $m\angle 4$.

$\angle 2$ & $\angle 3$

20. Find the range for the measure of the third side given the measures of two sides.

a. 1 and 6 $5 < n < 7$

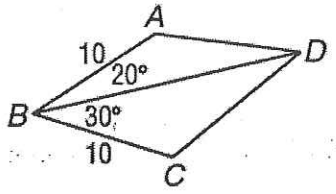
b. 82 and 8 $74 < n < 90$

21. Write the assumption you would make to start an indirect proof:

**Given:** $\angle 1$ is an exterior angle of $\Delta ABC$
**Prove:** $m\angle 1 = m\angle B + m\angle C$

$m\angle 1 \neq m\angle B + m\angle C$

22. Compare DC to AD.




$DC > AD$