Honors Geometry
Practice Worksheet
Section 5.1-5.2

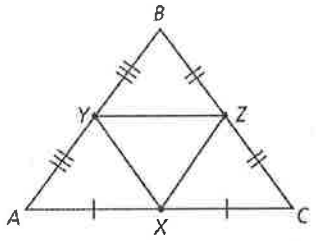
Name: Key

Fill in the blanks with the appropriate term.

1. The midsegment joins the midpoints of two sides of a triangle.
2. The midsegment is parallel to the third side of the triangle and is half the length.
3. A point is equidistant from two objects if it is the same distance from the objects.
4. The distance from a point to a line is measured by the length of the perpendicular segment from the point to the line.
5. If a point is on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.
6. If a point is on the bisector of an angle ~~of an angle~~, then the point is equidistant from the sides of the angle.

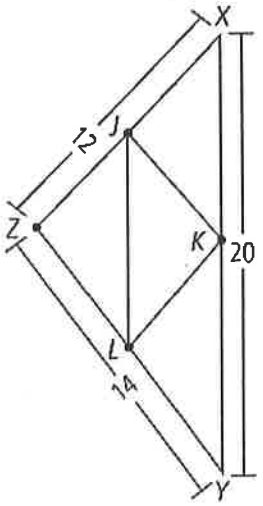
Identify three pairs of parallel segments in the diagram.

1. $\overline{AB} \parallel$? $\overline{XZ}$
2. $\overline{BC} \parallel$? $\overline{YX}$
3. $\overline{AC} \parallel$? $\overline{YZ}$
4. $\overline{YZ} \parallel$? $\overline{AC}$
5. $\overline{BY} \parallel$? $\overline{ZX}$
6. $\overline{ZC} \parallel$? $\overline{YX}$



Points *J*, *K*, and *L* are the midpoints of the sides of ΔXYZ.

7. Find *LK*. 6
8. Find *YK*. 10
9. Find *JK*. 7
10. Find *XK*. 10
11. Find *JL*. 10
12. Find *YL*. 7
13. Find *KL*. 6
14. Find *ZL*. 7



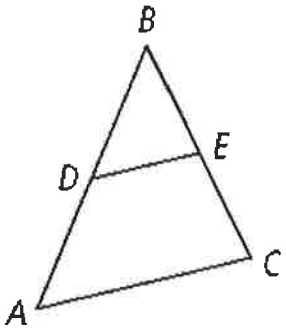
D is the midpoint of $\overline{AB}$. E is the midpoint of $\overline{CB}$.

15. If $m\angle A = 70$, find $m\angle BDE$.

(70) Corresponding

16. If $m\angle BED = 73$, find $m\angle C$.

(73) Corresponding



17. If $DE = 23$, find AC.

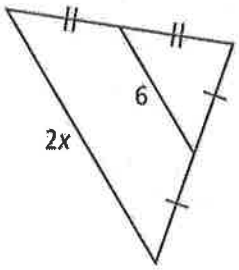
(46)

18. If $AC = 83$, find DE.

(41.5)

Find the value of x.

19.

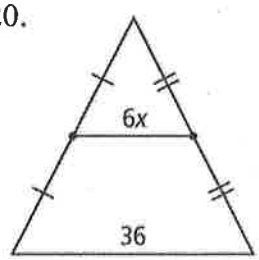


$2(6) = 2x$

$12 = 2x$

$x = 6$

20.

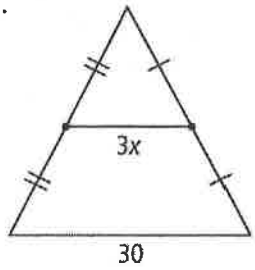


$2(6x) = 36$

$12x = 36$

$x = 3$

21.

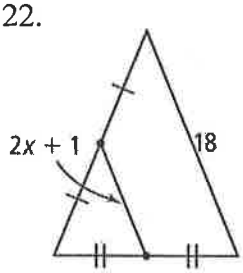


$2(3x) = 30$

$6x = 30$

$x = 5$

22.

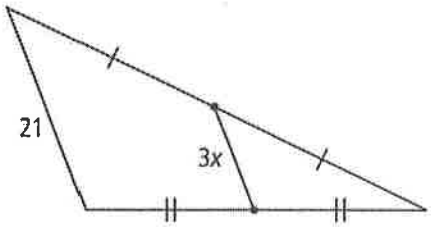


$2(2x+1) = 18$

$4x + 2 = 18$

$4x = 16$ $x = 4$

23.

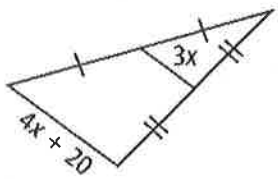


$2(3x) = 21$

$6x = 21$

$x = 3.5$

24.



$2(3x) = 4x + 20$

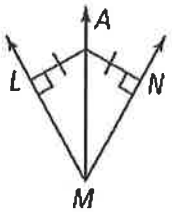
$6x = 4x + 20$

$2x = 20$

$x = 10$

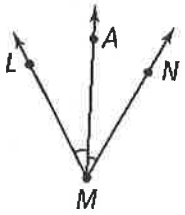
Determine whether A must be on the bisector of $\angle LMN$. Explain.

25.



Yes, equidistant from $\overline{LM}$ & $\overline{NM}$

26.



Yes, cuts $\angle LMN$ in half

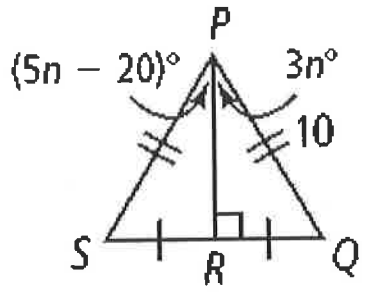
Use the figure at the right to answer the following questions.

27. According to the diagram, what are the lengths of $\overline{PQ}$ and $\overline{PS}$?

10

28. How is $\overline{PR}$ related to $\angle SPQ$?

Angle bisector



29. Find the value of n.

$5n - 20 = 3n$

$2n = 20$

$n = 10$

30. Find $m\angle SPR$ and $m\angle QPR$.

$m\angle SPR = 5(10) - 20$

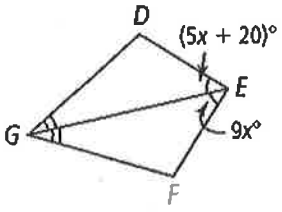
$= 30$

$m\angle QPR = 3(10)$

$= 30$

Find the indicated variables and measures.

31. x, $m\angle DEF$



$5x + 20 = 9x$

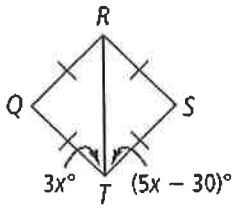
$4x = 20$

$x = 5$

$m\angle DEF = 5(5) + 20 + 9(5)$

$= 90$

32. x, $m\angle QTS$



$3x = 5x - 30$

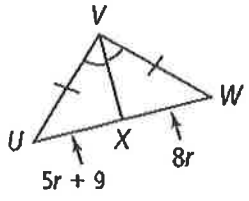
$2x = 30$

$x = 15$

$m\angle QTS = 3(15) + 5(15) - 30$

$= 90$

33. r, UW



$5r + 9 = 8r$

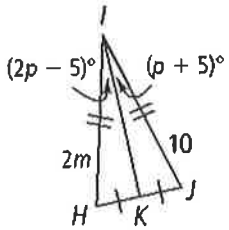
$3r = 9$

$r = 3$

$UW = 5(3) + 9 + 8(3)$

$= 48$

34. m, p



$2m = 10$

$m = 5$

$2p - 5 = p + 5$

$p = 10$