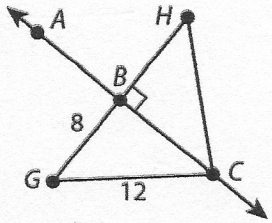
LESSON 4-4

Perpendicular Lines

Practice and Problem Solving: A/B

For Problems 1–4, determine the unknown values.

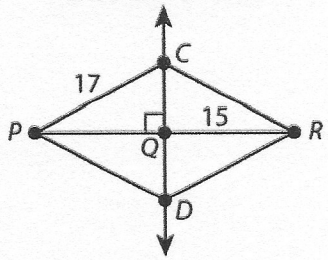
1. Given: $\overleftrightarrow{AC}$ is the perpendicular bisector of $\overline{GH}$.



$GH =$ 16

$CH =$ 12

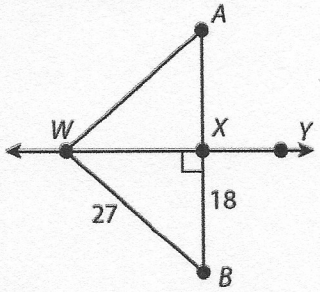
2. Given: $\overleftrightarrow{CD}$ is the perpendicular bisector of $\overline{PR}$.



$CR =$ 17

$PQ =$ 15

3. Given: $\overleftrightarrow{WY}$ is the perpendicular bisector of $\overline{AB}$.

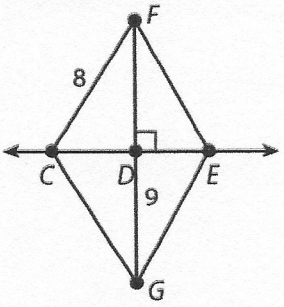


$WA =$ 27

$AX =$ 18

$AB =$ 36

4. Given: $\overleftrightarrow{CE}$ is the perpendicular bisector of $\overline{FG}$.



$FG =$ 18

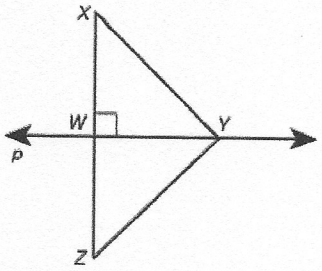
$FD =$ 9

$CG =$ 8

Use the figure for Problems 5 – 8.

5. Given that line p is the perpendicular bisector of $\overline{XZ}$ and $XY = 15.5$, find ZY.

15.5



6. Given that $XZ = 38$, $YX = 27$, and $YZ = 27$, find ZW. $= \frac{1}{2}(38) = 19$

7. Given that line p is the perpendicular bisector of $\overline{XZ}$, $XY = 4n$, and $YZ = 14$, find n.

$4n = 14$

$n = 3.5$

8. Given that $XY = ZY$, $WX = 6x - 1$, and $XZ = 10x + 16$, find ZW.

$WX + WZ = XZ$

$6x - 1 + 6x - 1 = 10x + 16$

$12x - 2 = 10x + 16$

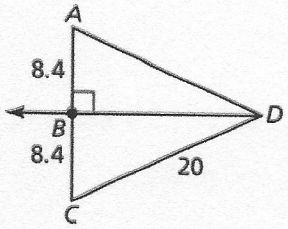
$2x = 18$

$x = 9$

$ZW = 6(9) - 1 = 53$

In Exercises 9 – 15, find the indicated measure. Explain your reasoning.

9. AD



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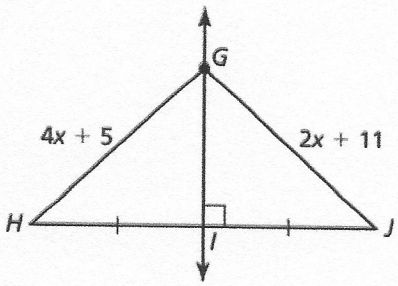
10. GJ



$4x + 5 = 2x + 11$

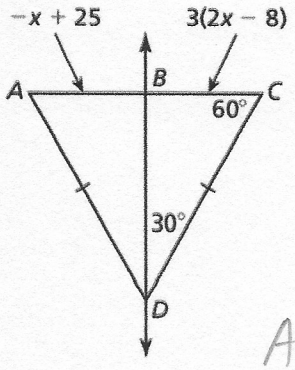
$2x = 6$

$x = 3$

$GJ = 2(3) + 11$

$= 17$

11. AC



$-x+25=3(2x-8)$

$-x+25=6x-24$

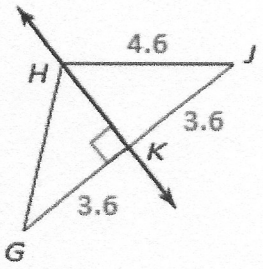
$49=7x$

$x=7$

$AB=-7+25=18$

$AC=36$

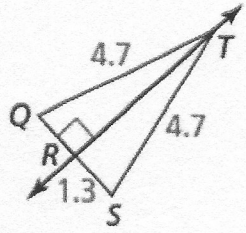
12. GH



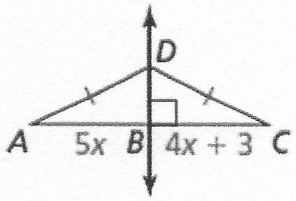
4.6

13. QR

1.3



14. AB

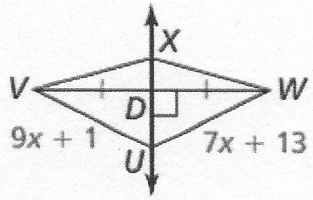


$5x=4x+3$

$x=3$

$AB=5(3)=15$

15. UW



$9x+1=7x+13$

$2x=12$

$x=6$

$UW=7(6)+13$

$=55$