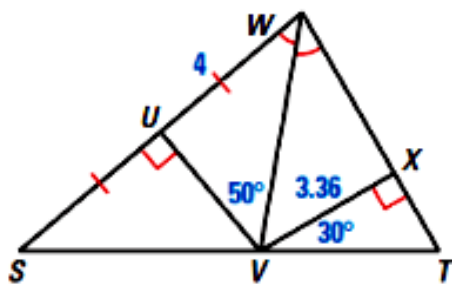


5.1 Extra Practice

USING BISECTOR THEOREMS In Exercises 21–26, match the angle measure or segment length described with its correct value.

- | | |
|-------------------|-------------------|
| A. 60° | B. 8 |
| C. 40° | D. 4 |
| E. 50° | F. 3.36 |
| 21. SW | 22. $m\angle XTV$ |
| 23. $m\angle VWX$ | 24. VU |
| 25. WX | 26. $m\angle WVX$ |



- 37. MULTI-STEP PROBLEM** Use the map shown and the following information. A town planner is trying to decide whether a new household X should be covered by fire station A , B , or C .

- Trace the map and draw the segments \overline{AB} , \overline{BC} , and \overline{CA} .
- Construct the perpendicular bisectors of \overline{AB} , \overline{BC} , and \overline{CA} . Do the perpendicular bisectors meet at a point?
- The perpendicular bisectors divide the town into regions. Shade the region closest to fire station A red. Shade the region closest to fire station B blue. Shade the region closest to fire station C gray.
- Writing* In an emergency at household X , which fire station should respond? Explain your choice.

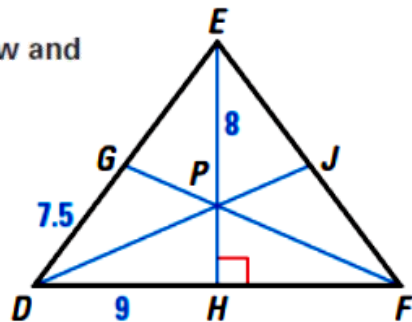


USING MEDIANS OF A TRIANGLE In Exercises 8–12, use the figure below and the given information.

P is the centroid of $\triangle DEF$, $\overline{EH} \perp \overline{DF}$, $DH = 9$, $DG = 7.5$, $EP = 8$, and $DE = FE$.

Find the length of \overline{FH} .

Find the length of \overline{EH} .

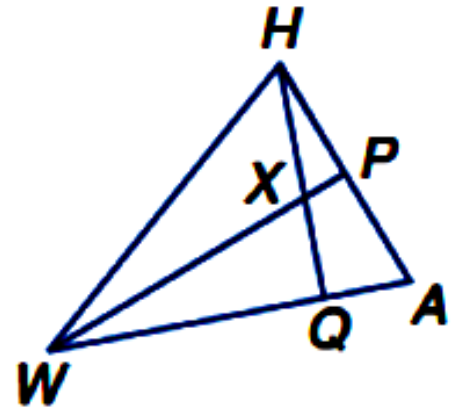


Find the length of \overline{PH} .

Find the perimeter of $\triangle DEF$.

Use the triangle WHA for #1 & 2.

1. If \overline{WP} is a median and an angle bisector, $AP = 3y + 11$, $PH = 7y - 5$, $m\angle HWP = x + 12$, $m\angle PAW = 3x - 2$, and $m\angle HWA = 4x - 16$, find x and y . Is \overline{WP} also an altitude? Explain.



2. If \overline{WP} is a perpendicular bisector, $m\angle WHA = 8q + 17$, $m\angle HWP = 10 + q$, $AP = 6r + 4$, and $PH = 22 + 3r$, find r , q , and $m\angle HWP$.

Use The following with the figure to the right.

In $\triangle PQR$, $ZQ = 3a - 11$, $ZP = a + 5$, $PY = 2c - 1$, $YR = 4c - 11$, $m\angle PRZ = 4b - 17$, $m\angle ZRQ = 3b - 4$, $m\angle QYR = 7b + 6$, and $m\angle PXR = 2a + 10$.

3. \overline{PX} is an altitude of $\triangle PQR$. Find a .
4. If \overline{RZ} is an angle bisector, find $m\angle PRZ$.
5. Find PR if \overline{QY} is a median.
6. If \overleftrightarrow{QY} is a perpendicular bisector of \overline{PR} , find b .

