

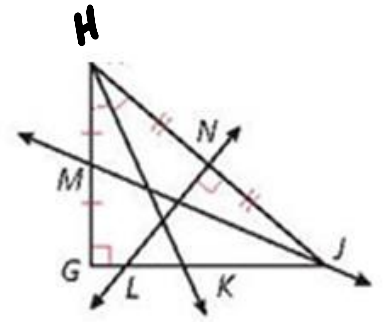
5.3 HOMEWORK

Name: Key

For 1 - 4, Use the diagram and word bank to answer the following questions:

Word Bank: altitude, angle bisector, median, perpendicular bisector

- 1) LN is a(n) ⊥ bisector
- 2) JM is a(n) median
- 3) HK is a(n) ∠ bisector
- 4) HG is a(n) altitude

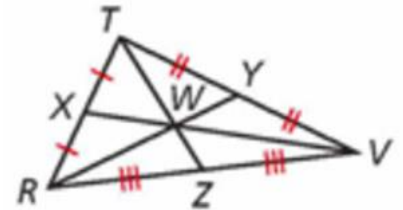


For 5 - 9, use the diagram to the right to answer the following questions.

- 5) Point W is called the centroid, because it is formed by the medians of a triangle.

If $VX = 204$ and $RW = 104$, find the following lengths:

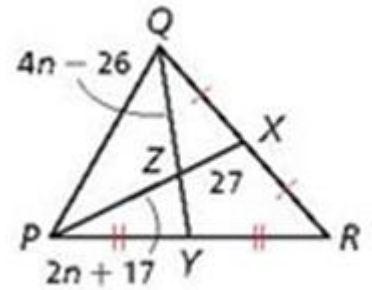
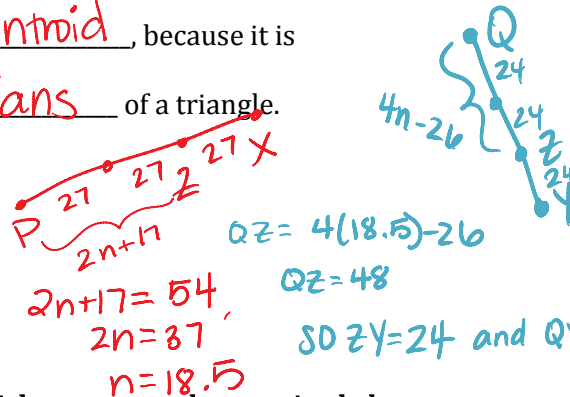
- 6) $VW =$ 136
- 7) $WX =$ 68
- 8) $RY =$ 156
- 9) $WY =$ 52



For 10-13, use the diagram to the right to answer the following questions.

- 10) Point Z is called the centroid, because it is formed by the medians of a triangle.

- 11) $PZ =$ 54
- 12) $n =$ 18.5
- 13) $QY =$ 72



For 14, use the diagram to the right to answer the question below.

- 14) Given: $\triangle DEF$, with altitude \overline{EG}
 $\angle EGD = x^2 + 2x + 75$, $\overline{ED} = 7x$

Find: the length of \overline{ED}

$$x^2 + 2x + 75 = 90$$

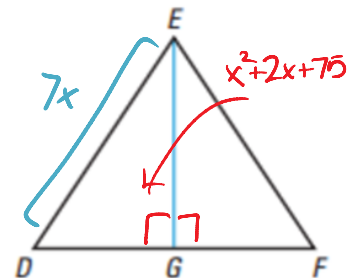
$$x^2 + 2x - 15 = 0$$

$$(x+5)(x-3) = 0$$

$$x = -5 \quad x = 3$$

$$ED = 7(3)$$

$$ED = 21$$



Write About It

15) Describe the similarity and differences between an altitude and a perpendicular bisector.

Similarity

- Form rt. \angle 's w/ opp. side

Difference

- \perp bis also \div 's opp side into 2 \cong segs
- Altitude does NOT have to

16) When is the altitude of a triangle the same as the perpendicular bisector of a triangle? Justify your answer in words and with a drawing.

The altitude of a Δ is the same as a \perp bisector when :

- Case 1: In an isos Δ when drawn from the vertex to the base



- Case 2: drawn from any vertex to any side in an equilateral Δ .

