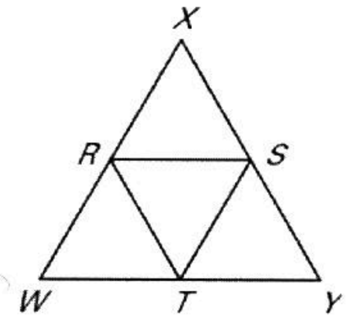
Geometry
5.1-5.3 Practice

Name: Key
Date: ______ Period: ______

Use $\triangle WXY$, where R, S, and T are midpoints of the sides.



1. $\overline{RS} \parallel$ $\overline{WY}$
2. $\overline{ST} \parallel$ $\overline{XW}$
3. If $TY = 4$, then $RS =$ 4.
4. Find x if $RT = x^2 + 2x$ and $XY = 10x + 32$ 56

$2(x^2+2x) = 10x+56$

$2x^2+4x = 10x+56$ $\quad x=7 \quad x=-4$

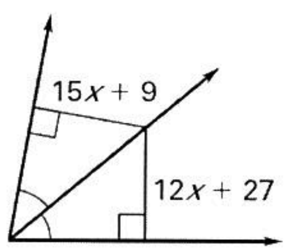
$2x^2-6x-56=0$

$x^2-3x-28=0$

$(x-7)(x+4)=0$

Find the value of x and give the theorem that justifies your answer.

5.

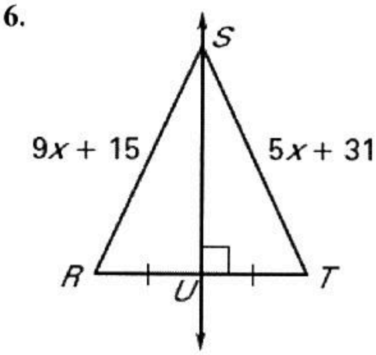


$15x+9 = 12x+27$ by ∠ Bis Thm.

$3x=18$

$x=6$

6.

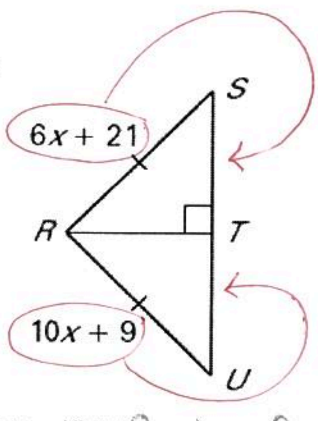


$9x+15 = 5x+31$ by Perp. Bis Thm

$4x=16$

$x=4$

7.

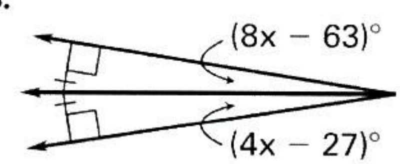


$6x+21 = 10x+9$ by Perp Bis Conv.

$12 = 4x$

$3 = x$

8.

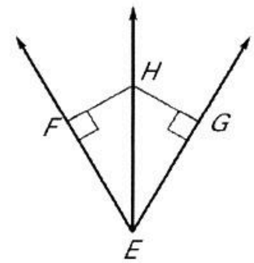


$8x-63 = 4x-27$ by ∠ Bis Conv.

$4x = 36$

$x = 9$

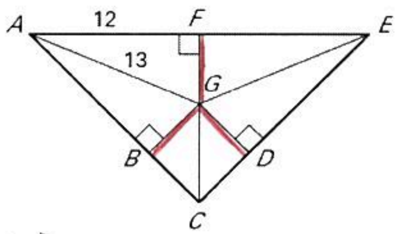
9. Can you conclude that $\overrightarrow{EH}$ bisects $\angle FEG$? *Explain.*



No, you would need to know FH = HG to apply the ∠ Bis Conv.

Find the indicated measure.

10. If G is the *incenter,* find DG.



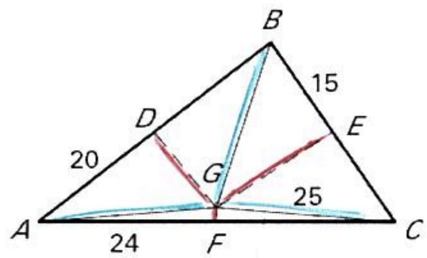
$13^2 = 12^2 + FG^2$

$\sqrt{169-144} = FG$

$\sqrt{25} = FG$

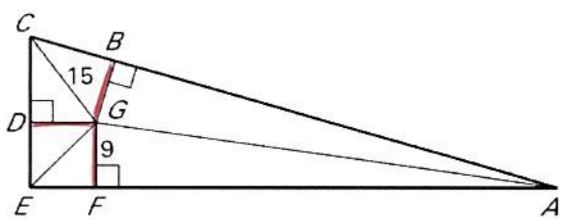
$5 = FG = DG$

11. If G is the *circumcenter,* find AG.

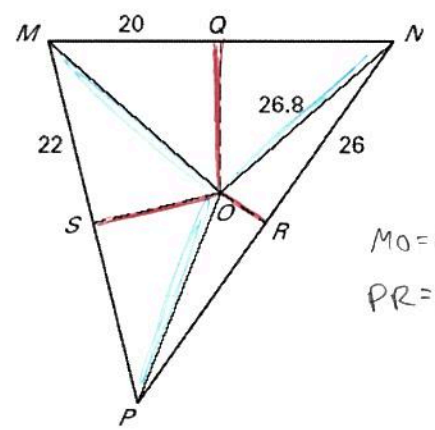


$AG = 25$

12. If G is the *incenter*, find BG.



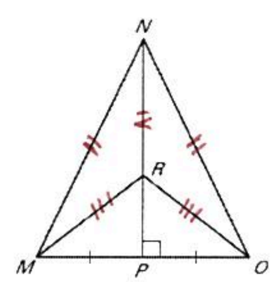
13. If O is the *circumcenter,* find MO and PR.



$MO = 26.8$

$PR = 26$

14. GIVEN: $\overline{NP}$ is a perpendicular bisector of $\overline{MO}$.
PROVE: $\Delta NMR \cong \Delta NOR$



① $\overline{NP}$ is ⊥ bis of $\overline{MO}$	① Given
② $\overline{NM} \cong \overline{NO}$	② Perp Bis Thm
③ $\overline{RM} \cong \overline{RO}$	③ Perp Bis Thm
④ $\overline{NR} \cong \overline{NR}$	④ Reflexive
⑤ $\Delta NMR \cong \Delta NOR$	⑤ SSS ≅ Postulate