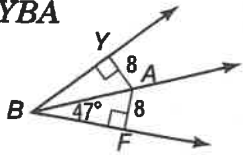


Chapter 5 Review HW

5

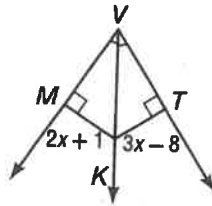
1) Find each measure:

$m\angle YBA$



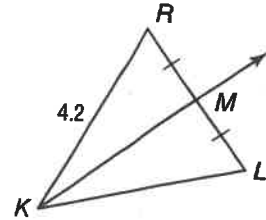
$$m\angle YBA = 47^\circ$$

MK



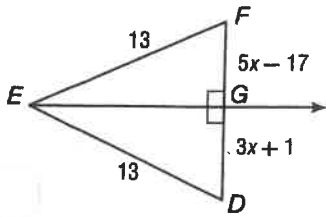
$$\begin{aligned} 2x+1 &= 3x-8 \\ 9 &= x \\ MK &= 2(9)+1 \\ &= 19 \end{aligned}$$

KL



$$KL = 4.2$$

FG



$$\begin{aligned} 5x-17 &= 3x+1 \\ 2x &= 18 \\ x &= 9 \end{aligned}$$

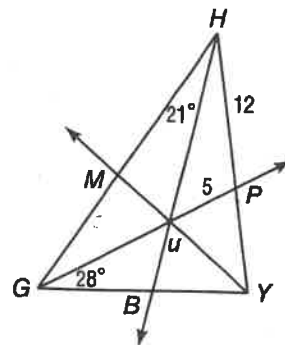
$$\begin{aligned} FG &= 5(9) - 17 \\ &= 28 \end{aligned}$$

2)

Point U is the incenter of $\triangle GHY$. Find each measure.

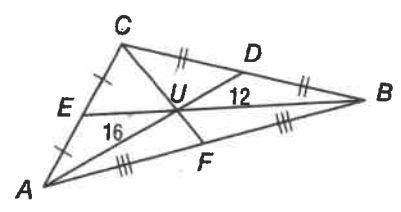
7. $m\angle PHU = 21^\circ$

6. $m\angle UGM = 28^\circ$



3) In $\triangle ABC$, $AU = 16$, $BU = 12$, and $CF = 18$. Find each measure.

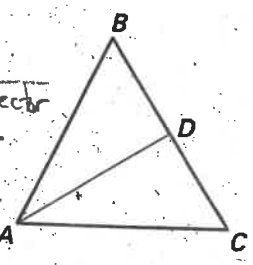
* Medians



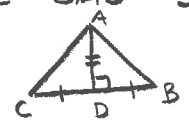
- 1. $UD = 8$
- 2. $EU = 6$
- 3. $CU = 12$
- 4. $AD = 24$
- 5. $UF = 6$
- 6. $BE = 18$

4) Use the diagram shown and the given information to decide in each case whether \overline{AD} is a perpendicular bisector, an angle bisector, a median, or an altitude of $\triangle ABC$.

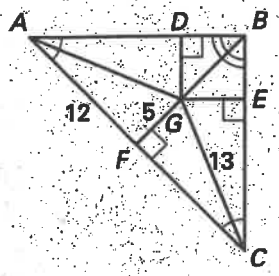
- 1. $\overline{DB} \cong \overline{DC}$ Median
- 2. $\angle BAD \cong \angle CAD$ Angle Bisector
- 3. $\overline{DB} \cong \overline{DC}$ and $\overline{AD} \perp \overline{BC}$ Median, Perp. Bisector
- 4. $\overline{AD} \perp \overline{BC}$ Altitude
- 5. $\triangle BAD \cong \triangle CAD$ Median, Perp. Bisector, Angle Bisector, Altitude



* On #3 \triangle 's \cong b/c SAS so use CPCTC

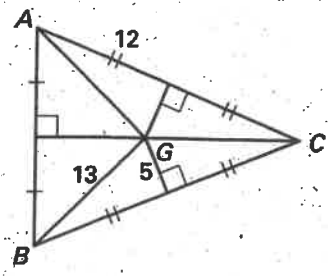


5) The angle bisectors of $\triangle ABC$ meet at point G. Find GD.



$GD = 5$

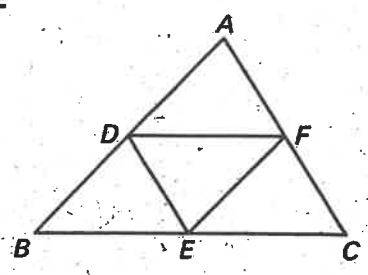
6) The perpendicular bisectors of $\triangle ABC$ meet at point G. Find GA.



$GA = 13$

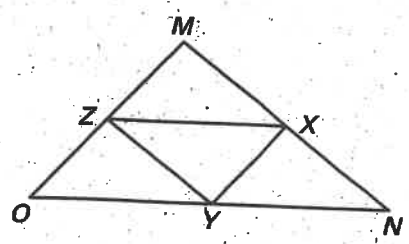
Midsegment

7) Use the diagram of $\triangle ABC$ where D , E , and F are the midpoints of the sides.



1. $\overline{DE} \parallel ? \overline{AC}$
2. $\overline{FE} \parallel ? \overline{AB}$
3. If $AB = 14$, then $EF = ?$. 7
4. If $BE = 8$, then $DF = ?$. 8
5. If $DE = 6$, then $AC = ?$. 12

8) Use the diagram of $\triangle MNO$ where X , Y , and Z are the midpoints of the sides.



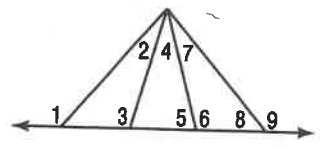
If $YZ = 3x + 1$, and $MN = 10x - 6$ then $YZ = ?$. 7
 If $YX = x - 1$, and $MO = 3x - 7$ then $MO = ?$. 28

$$\begin{aligned} 2(3x+1) &= 10x-6 \\ 6x+2 &= 10x-6 \\ 8 &= 4x \\ 2 &= x \\ YZ &= 3(2)+1 \\ &= 7 \end{aligned}$$

$$\begin{aligned} 2(x-1) &= 3x-7 \\ 2x-2 &= 3x-7 \\ 5 &= x \\ MO &= 3(5)-7 \\ &= 28 \end{aligned}$$

5.3

9) Use the Exterior Angle Inequality Theorem to list all of the angles that satisfy the stated condition.



measures less than $m\angle 1$
 $\angle 2, \angle 4, \angle 7, \angle 3, \angle 5, \angle 8$

measures less than $m\angle 9$
 $\angle 7, \angle 6, \angle 4, \angle 2$

measures greater than $m\angle 5$
 $\angle 1, \angle 3$

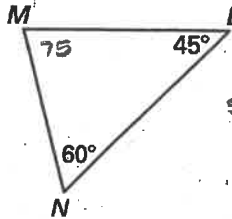
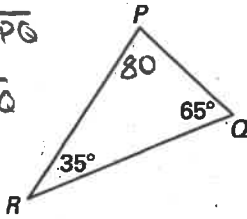
measures greater than $m\angle 8$
 $\angle 5, \angle 3, \angle 1$

10)

Name the shortest and longest sides of the triangle.

shortest = \overline{PQ}

longest = \overline{RQ}

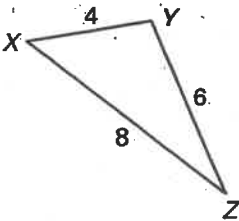


shortest = \overline{MN}

longest = \overline{NL}

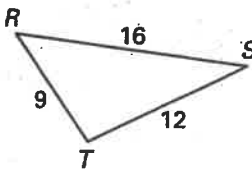
11)

Name the smallest and largest angles of the triangle.



smallest $\angle Z$

largest $\angle Y$



smallest $\angle S$

largest $\angle T$

5.5

12) Is it possible to form a triangle with the given side lengths? If not, explain why not.

1. 2 ft, 3 ft, 4 ft

$$2 + 3 > 4 \checkmark$$

$$3 + 4 > 2 \checkmark$$

$$4 + 2 > 3 \checkmark$$

yes

2. 5 m, 7 m, 9 m

yes

$$5 + 7 > 9 \checkmark$$

$$7 + 9 > 5 \checkmark$$

$$9 + 5 > 7 \checkmark$$

13) Find the range for the measure of the third side of a triangle given the measures of two sides.

9. 5 ft, 9 ft

$$5 + 9 > x$$

$$5 + x > 9$$

$$x + 9 > 5$$

$$14 > x$$

$$x > 4$$

$$x > -4$$

$4 < x < 14$

10. 7 in., 14 in.

$$7 + 14 > x$$

$$x + 7 > 14$$

$$x + 14 > 7$$

$$21 > x$$

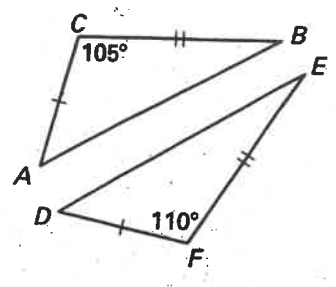
$$x > 7$$

$$x > -7$$

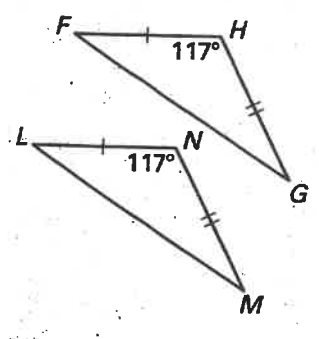
$7 < x < 21$

14) Complete with $<$, $>$, or $=$.

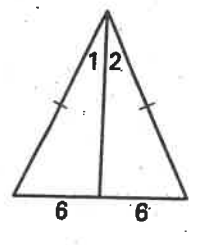
$AB \text{ ? } DE \quad <$



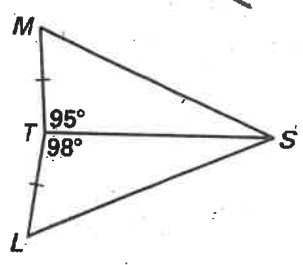
$FG \text{ ? } LM \quad =$



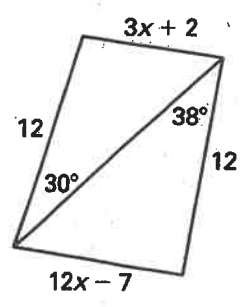
$m\angle 1 \text{ ? } m\angle 2 \quad =$



$MS \text{ ? } LS \quad <$



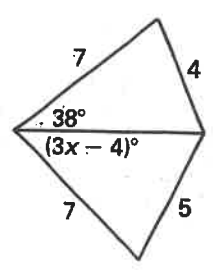
15) Use an inequality to describe a restriction on the value of x as determined by the Hinge Theorem or its converse.



$$12x - 7 < 3x + 2$$

$$9x < 9$$

$x < 1$



$$3x - 4 > 38$$

$$3x > 42$$

$x > 14$

