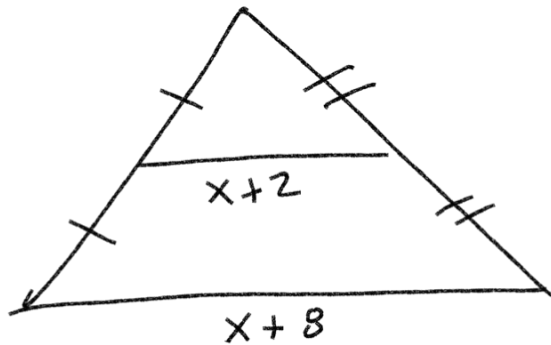
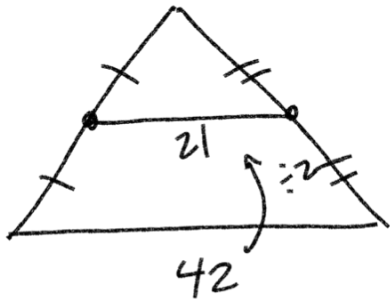
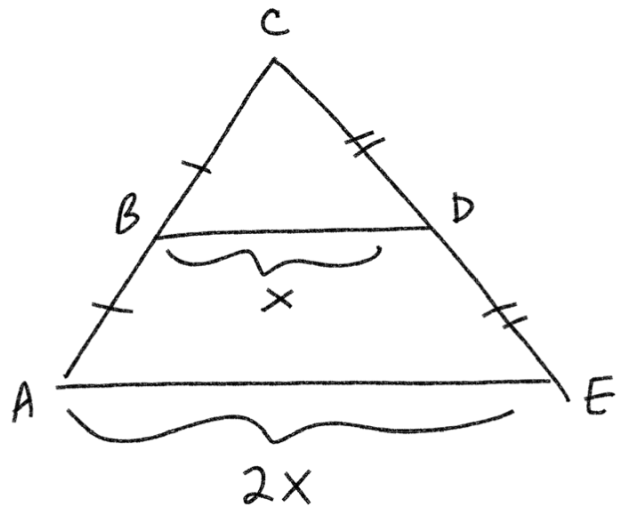
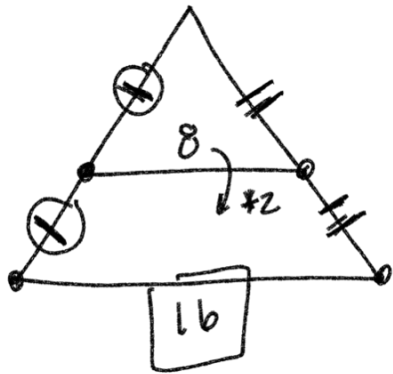


TH-G Geometry Week 24

Midsegments



$2 * \text{MIDSEGMENT} = \text{BASE}$

$2(x+2) = x+8$

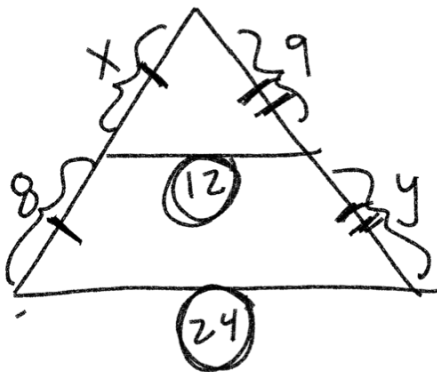
$2x+4 = x+8$

$-x \quad -x$

$x+4 = 8$

$-4 \quad -4$

$x=4$

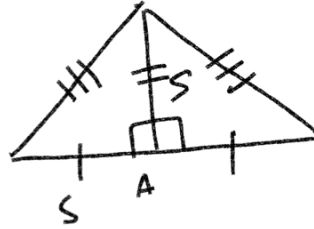
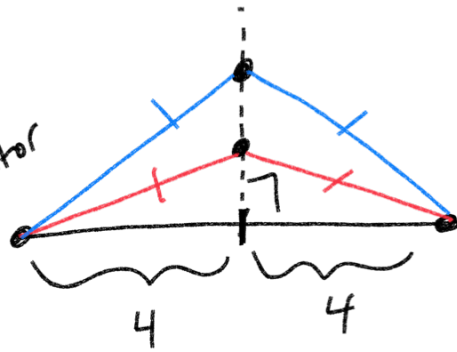
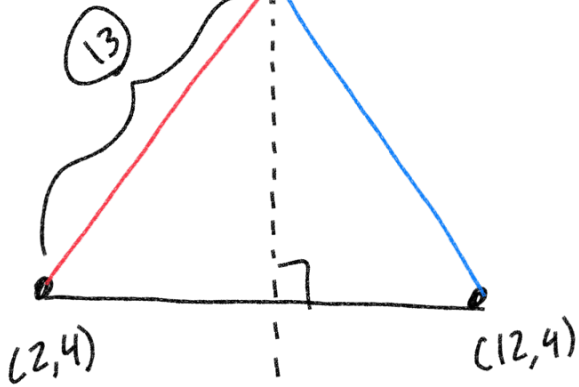


$x=8$

$y=9$

Perpendicular Bisector - divides a segment or angle into 2 equal parts

is on the perpendicular bisector



SAS

$$a^2 + b^2 = c^2$$

Distance Formula

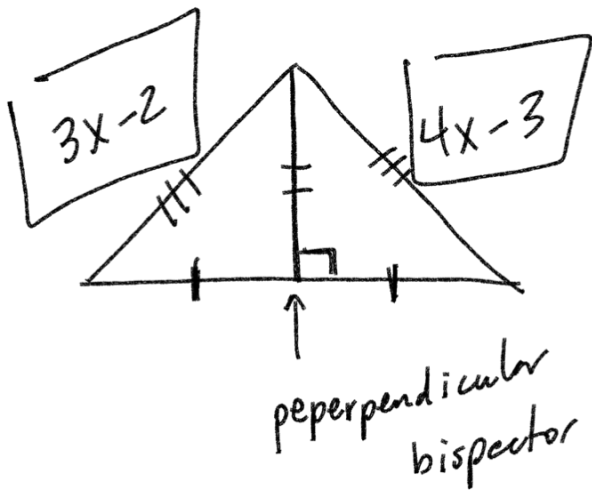
$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

(7, 16)    (12, 4)

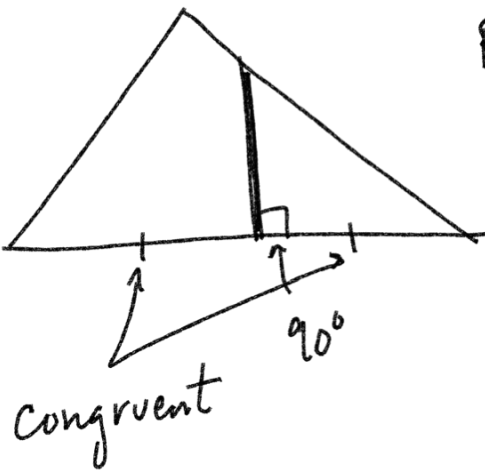
$$\begin{aligned} & \sqrt{(2-7)^2 + (4-16)^2} \\ & \sqrt{(-5)^2 + (-12)^2} \\ & \sqrt{25 + 144} \\ & \sqrt{169} = \boxed{13} \end{aligned}$$

$$\begin{aligned} & \sqrt{(7-12)^2 + (16-4)^2} \\ & \sqrt{(-5)^2 + (12)^2} \\ & \sqrt{25 + 144} \\ & \sqrt{169} = \boxed{13} \end{aligned}$$

$$\begin{array}{cc} x & y \\ (2, 4) & (7, 16) \end{array}$$

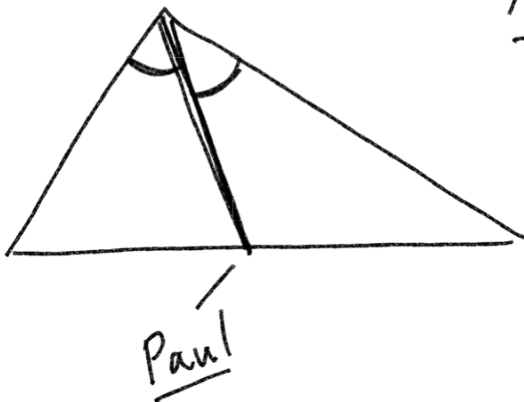


$$\begin{aligned}
 3x-2 &= 4x-3 \\
 -3x &\quad -3x \\
 -2 &= x-3 \\
 +3 &\quad +3 \\
 \boxed{1} &= x
 \end{aligned}$$



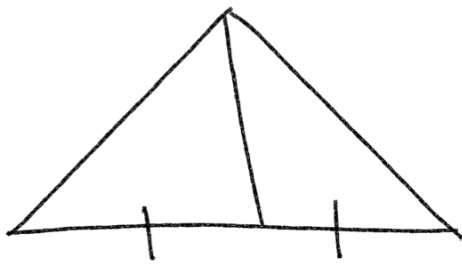
Perpendicular Bisector

separates a segment into two congruent pieces



Angle Bisector

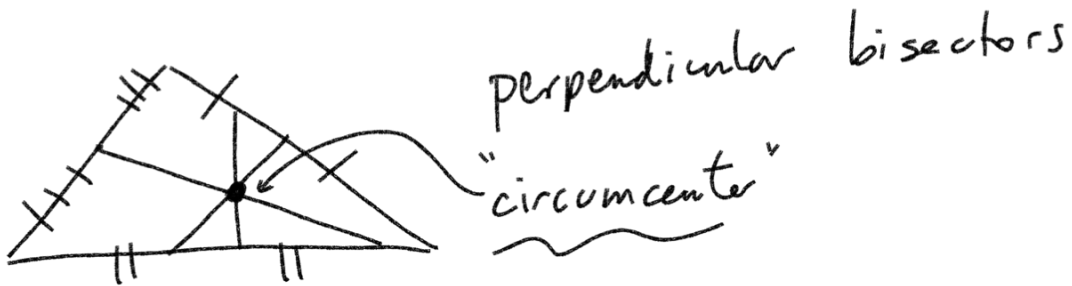
cuts an angle into two equal pieces



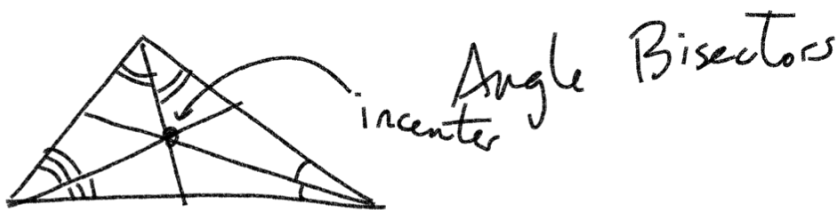
Median  
segment bisector  
starting at vertex  
(no perpendicular angle)



Altitude (Height)  
vertex to opposite side,  
forms right angle



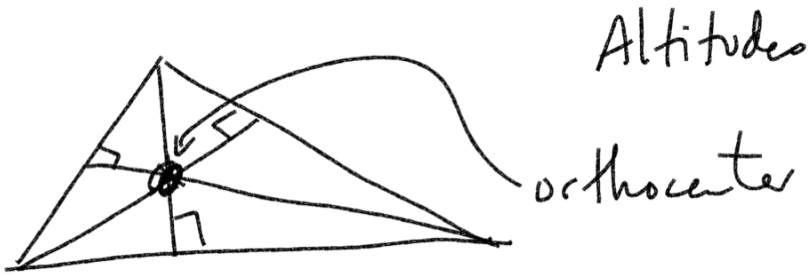
perpendicular bisectors  
"circumcenter"



Angle Bisectors  
incenter

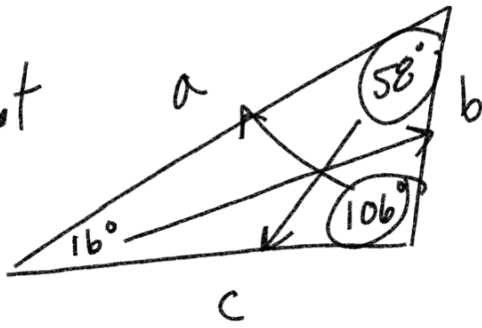


Median  
centroid

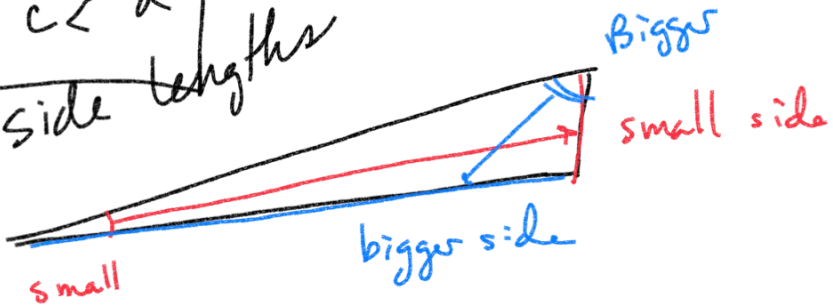


Angles  
least  $\rightarrow$  greatest

$$16^\circ < 58^\circ < 106^\circ$$

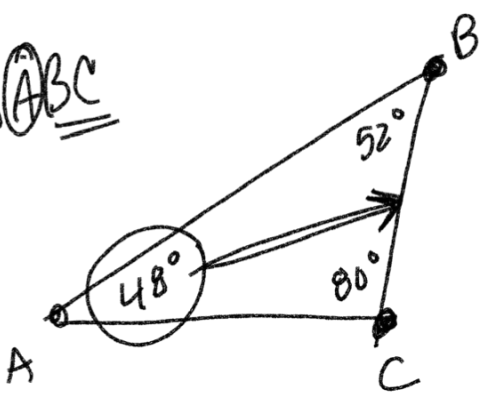


$b < c < a$   
side lengths

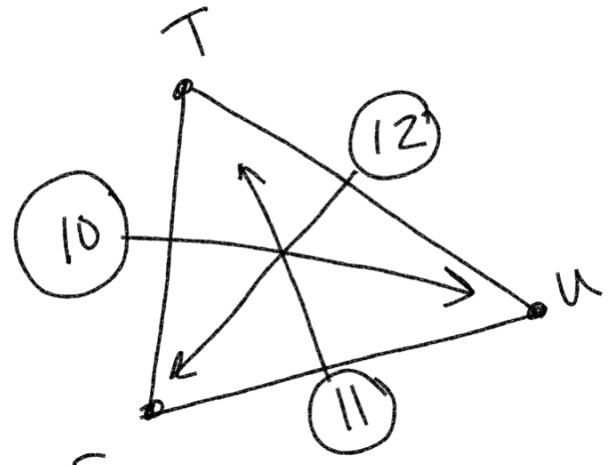
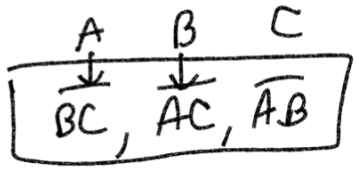


- Equal sides open from equal angles
- Bigger angles opens to a bigger side

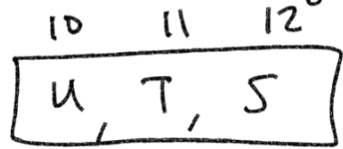
$\triangle ABC$



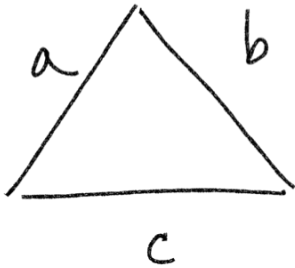
order the sides from least to greatest



order the angles from least to greatest



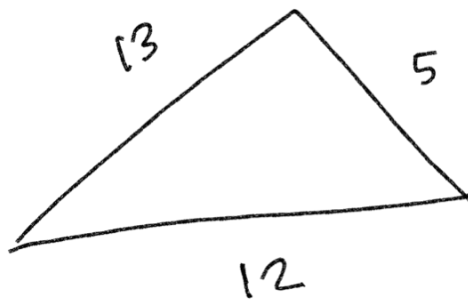
The sum of any two sides of a triangle must be greater than any one side.



$$a + b > c$$

$$a + c > b$$

$$b + c > a$$



$$5 + 12 > 13$$

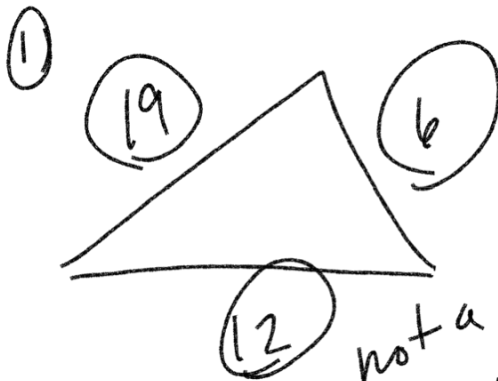
$$17 > 13$$

$$5 + 13 > 12$$

$$18 > 12$$

$$12 + 13 > 5$$

$$25 > 5$$



$$12 + 19 > 6$$

$$31 > 6$$

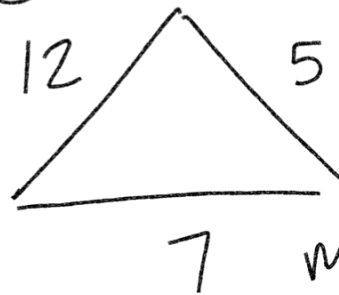
$$6 + 19 > 12$$

$$25 > 12$$

~~$$6 + 12 > 19$$~~

~~$$18 > 19$$~~

②



$$12 + 5 > 7$$

$$17 > 7$$

$$12 + 7 > 5$$

$$19 > 5$$

~~$$7 + 5 > 12$$~~

~~$$12 > 12$$~~

HW

ch 5.3 events

ch 5.5 events

Supplemental WS

online HW 24

Quiz 24

} April 8<sup>th</sup>

HW/Quiz 23

due March 26<sup>th</sup>