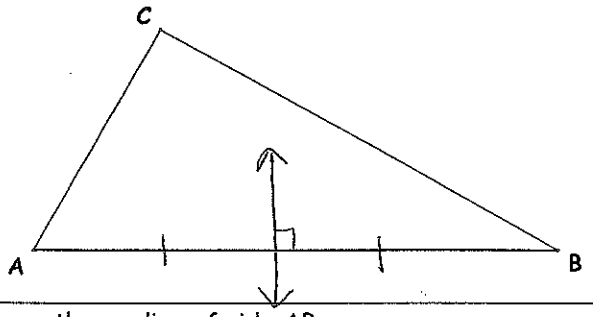
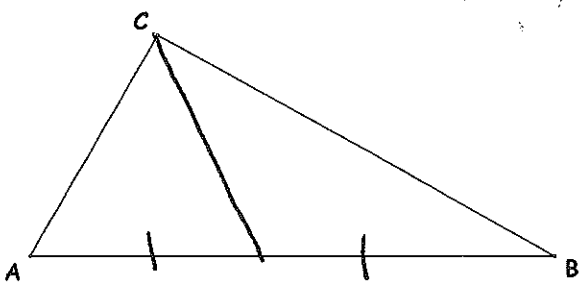
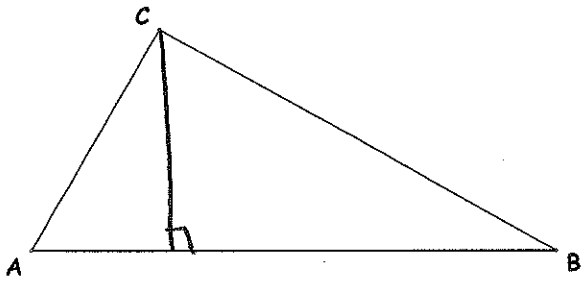
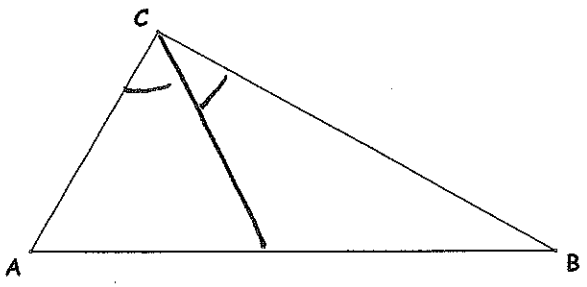
Geometry
Notes – Special Segments in Triangles

Name KEY

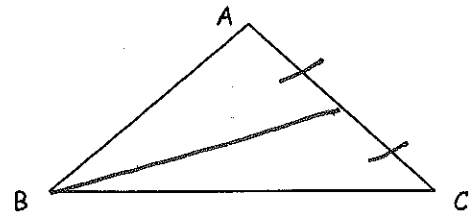
Date_____

There are *four* special segments that we can draw and use in any type of triangle. Here is a description and we will draw pictures of each:

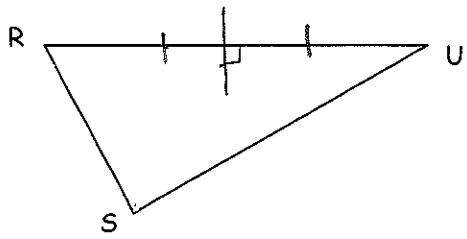
Special Segment	Description	Picture
Perpendicular Bisector	Goes through the *midpoint* of a side, and is *perpendicular* to the side. (does *not* have to go through the opposite vertex)	Draw the perpendicular bisector of side AB. 
Median	Goes through the *midpoint* of a side and connects to the opposite *vertex*	Draw the median of side AB. 
Altitude	Must be *perpendicular* to a side, *and* go through the opposite vertex	Draw the altitude to side AB. 
Angle Bisector	Goes through a *vertex* of a triangle, cutting that angle in *half*	Draw the angle bisector of $\angle C$. 

Draw each of the following figures.

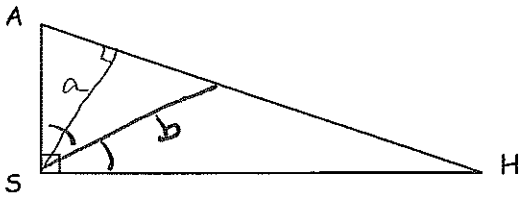
1. Draw the median to side AC.



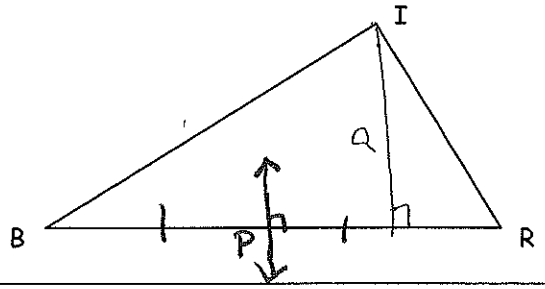
2. Draw the perpendicular bisector of side RU.



3. Draw the angle bisector of ∠S *and* the altitude to side HA. (put a "b" by the bisector of ∠S and an "a" by the altitude)

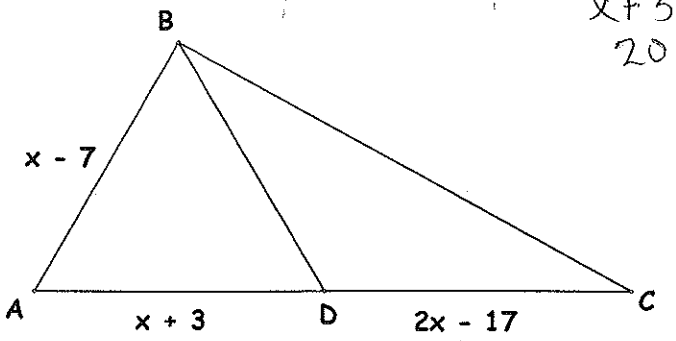


4. Draw the altitude to side BR *and* the perpendicular bisector of side BR. (put an "a" by the altitude and a "p" by the perpendicular bisector)



Solve for x and then plug it in to find the measure of each indicated side. Beware of extra information!

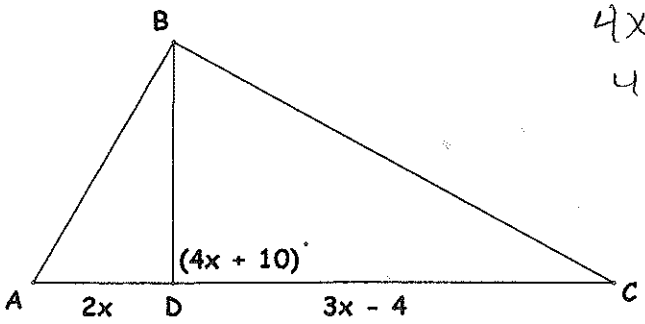
1. Find AB if BD is a median in ΔABC.



$x+3=2x-17$
$20=x$

x = 20, AB = 13

2. Find AC if AD is an altitude of ΔABC.



$4x+10=90$
$4x=80$
$x=20$

x = 20, BC = _____