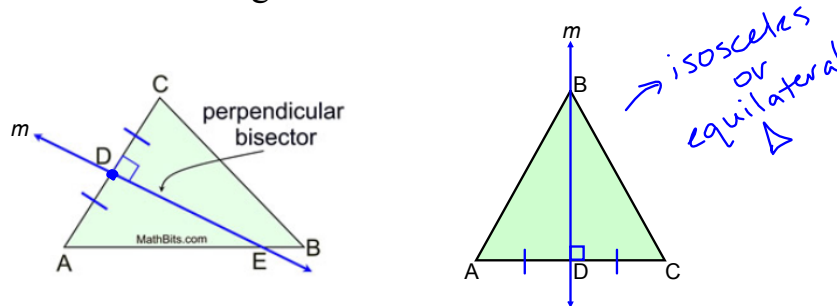


### Segments in Triangles

A **perpendicular bisector** is a line (or segment or ray) that is perpendicular to a side of the triangle and also bisects that side of the triangle.

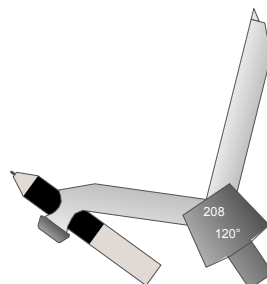
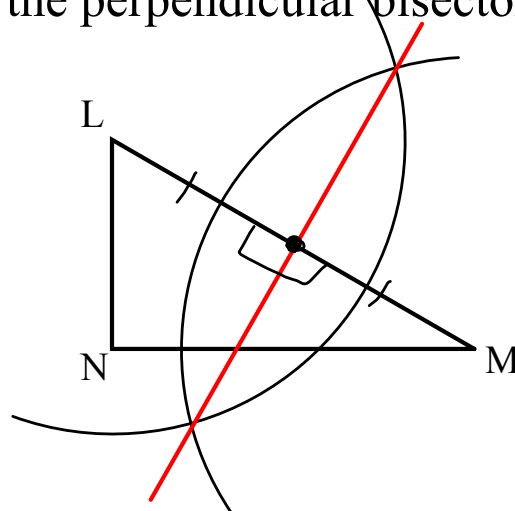
★ The perpendicular bisector may, or may NOT, pass through the vertex of the triangle. ★



If line  $m$  is the perpendicular bisector of  $\overline{AC}$ , then  $\angle ADB$  and  $\angle ADC$  are right angles and  $D$  is the midpoint of  $\overline{AC}$  therefore  $\overline{AD} \cong \overline{DC}$

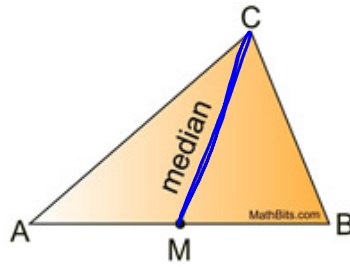
Nov 4-1:22 PM

Construct the perpendicular bisector of  $\overline{LM}$



Sep 27-2:12 PM

A **median** of a triangle is a segment joining any vertex of the triangle to the midpoint of the opposite side.



If  $\overline{CM}$  is a median in  $\triangle ABC$ , then  $M$  is the

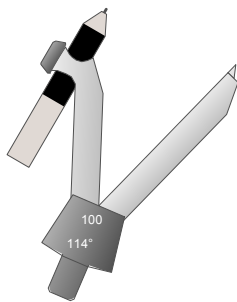
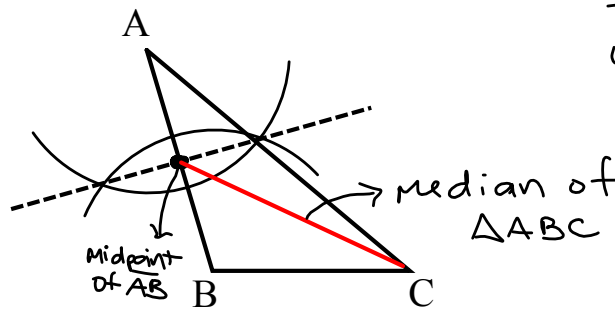
midpoint of  $\overline{AB}$

and  $\overline{AM} \cong \overline{MB}$

Nov 4-1:20 PM

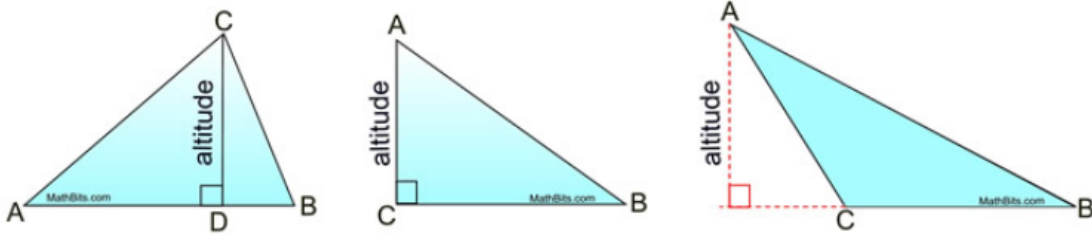
Construct a median from vertex C.

⊥ bisector  
to locate  
midpoint  
of  $\overline{AB}$



Sep 27-10:24 AM

An **altitude** of a triangle is a segment from any vertex perpendicular to the line containing the opposite side.

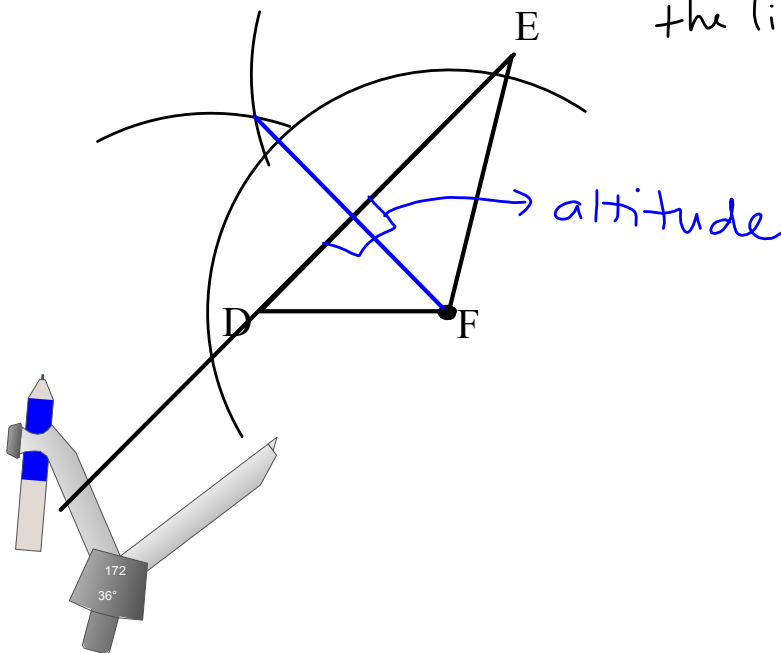


Altitudes are perpendicular and form right angles. They may, or may NOT, bisect the side to which they are drawn.

Nov 4-1:21 PM

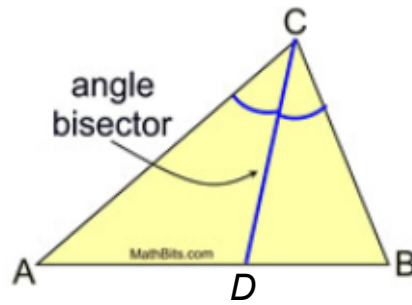
Construct an altitude from vertex F.

→  $\perp$  to a line from a point off the line



Sep 27-10:27 AM

An **angle bisector** is a ray from the vertex of the angle into the opposite side, which forms two congruent angles.

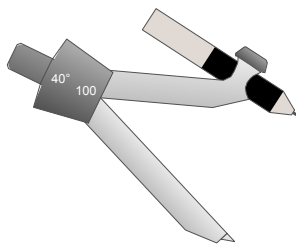
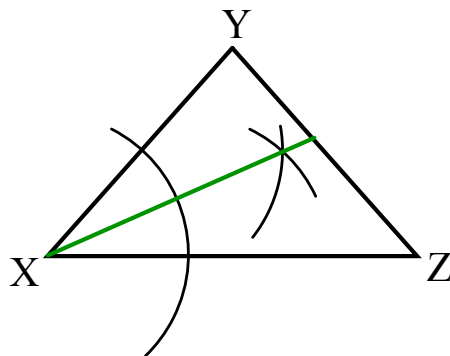


If  $\overline{CD}$  is the angle bisector of  $\angle ACB$ , then

$$\underline{\angle ACD \cong \angle BCD}$$

Nov 4-1:22 PM

Bisect angle X



Sep 27-10:28 AM