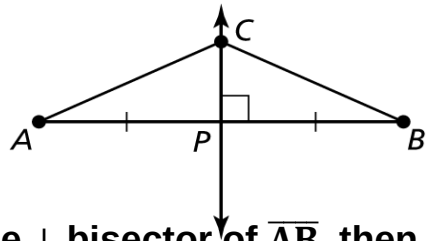
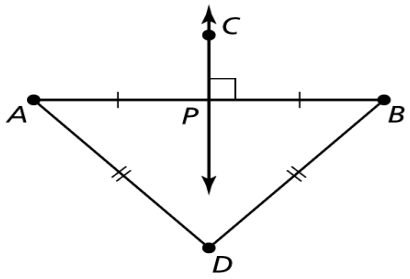
NOTES 6.1: Perpendicular and Angle Bisectors

Objective: _____

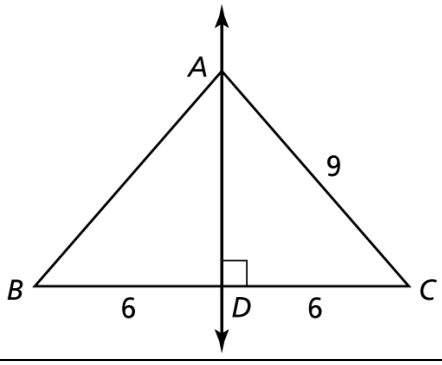
_____

Equidistant:

THEOREM	DIAGRAM
PERPENDICULAR BISECTOR THEOREM In a plane, if a point lies on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.	 **If $\overleftrightarrow{CP}$ is the $\perp$ bisector of $\overline{AB}$, then** _____.
CONVERSE OF THE PERPENDICULAR BISECTOR THEOREM In a plane, if a point is equidistant from the endpoints of a segment, then it lies on the perpendicular bisector of the segment.	 **If $DA = DB$ then point D lies on the** **$\perp$ bisector of _____.**

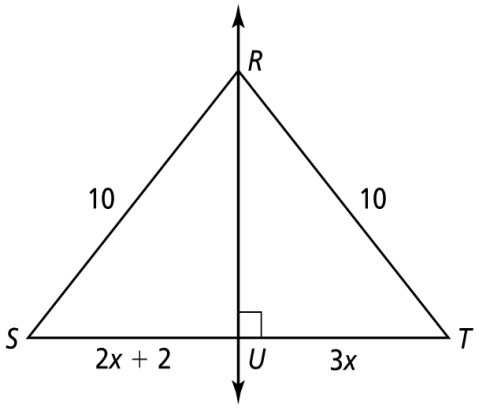
Example 1:

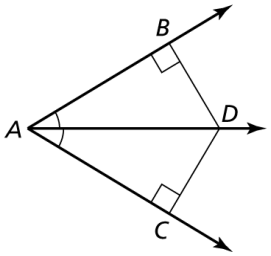
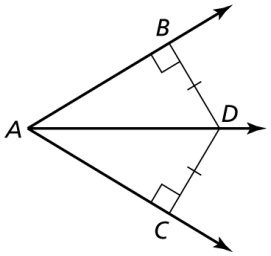
Find AB and explain your reasoning.



Example 2:

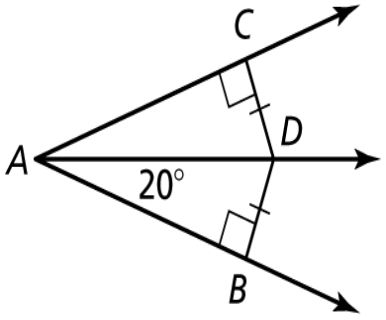
Find SU and explain your reasoning.



THEOREM	DIAGRAM
ANGLE BISECTOR THEOREM If a point lies on the bisector of an angle, then it is equidistant from the two sides of the angle.	 **If $\overrightarrow{AD}$ bisects $\angle BAC$ and $\overline{DB} \perp \overrightarrow{AB}$ and $\overline{DC} \perp \overrightarrow{AC}$, then _____.**
CONVERSE OF THE ANGLE BISECTOR THEOREM If a point is in the interior of an angle and is equidistant from the two sides of the angle, then it lies on the bisector of the angle.	 **If $\overline{DB} \perp \overrightarrow{AB}$ and $\overline{DC} \perp \overrightarrow{AC}$ and $DB = DC$, then $\overrightarrow{AD}$ bisects _____.**

Example 3:

Find $m\angle CAB$ and explain your reasoning.



Example 4:

Find BD and explain your reasoning.