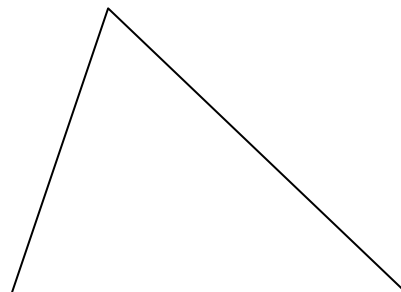# 5-1 Bisectors of Triangles

Use your book to find and fill in the definitions and formulas below.
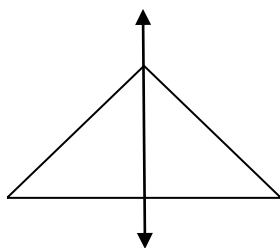
Perpendicular Bisector - _____

_____

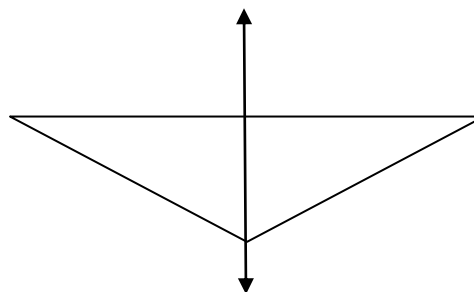   *draw the perpendicular bisectors

    Name the point of concurrency: _____

Perpendicular Bisector Theorem and Converse

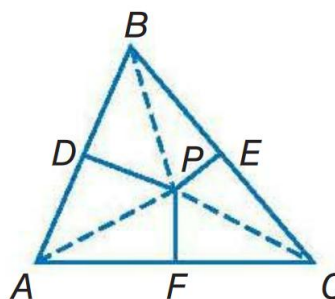If $\overline{CD}$ is a $\perp$ bisector of $\overline{AB}$

Then _____ = _____

If $AE = BE$, then ____ lies on _____ ,

the $\perp$ bisector of $\overline{AB}$

Circumcenter Theorem

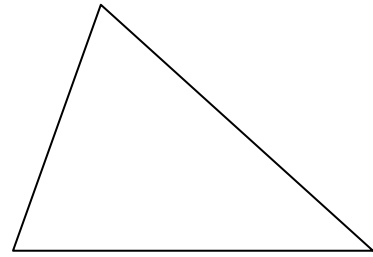If P is the circumcenter of ΔABC,

Then _____ = _____ = _____

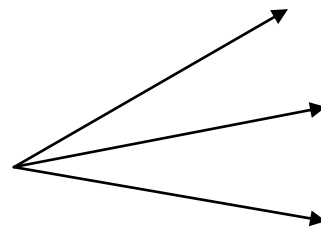**Angle Bisector** - _____

_____

*draw the angle bisectors

Name the point of concurrency: _____
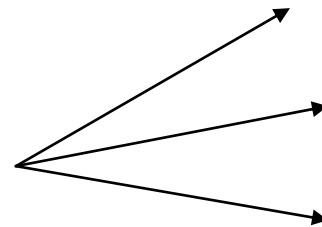
Angle Bisector Theorem and Converse

If $\overrightarrow{BF}$ bisects $< DBE$, $\overline{FD} \perp \overrightarrow{BD}$, and

$\overline{FE} \perp \overrightarrow{BE}$, then _____ = _____

If $\overline{FD} \perp \overrightarrow{BD}$, $\overline{FE} \perp \overrightarrow{BE}$, and $\overline{DF} = \overline{FE}$,

Then _____ bisects _____

Incenter Theorem

If P is the incenter of ΔABC,

Then _____ = _____ = _____