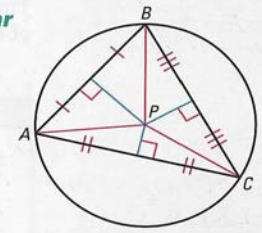
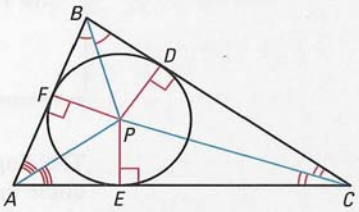
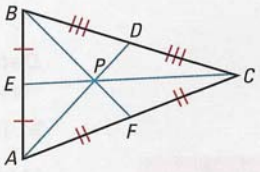
MR.SALTZEN'S GEOMETRY STUDY GROUP

****FACTS YOU HAVE TO MEMORIZE ABOUT Δ CONCURRENCIES****

CONCURRENT LINES	*POINT OF CONCURRENCY*	*RELEVANT THEOREM*
perpendicular bisectors	**circumcenter**	THEOREM **THEOREM 5.5** ***Concurrency of Perpendicular Bisectors of a Triangle*** The perpendicular bisectors of a triangle intersect at a point that is equidistant from the vertices of the triangle. $PA = PB = PC$ 
angle bisectors	**incenter**	THEOREM **THEOREM 5.6** ***Concurrency of Angle Bisectors of a Triangle*** The angle bisectors of a triangle intersect at a point that is equidistant from the sides of the triangle. $PD = PE = PF$ 
medians	**centroid**	THEOREM **THEOREM 5.7** ***Concurrency of Medians of a Triangle*** The medians of a triangle intersect at a point that is two thirds of the distance from each vertex to the midpoint of the opposite side. If P is the centroid of $\triangle ABC$, then $AP = \frac{2}{3}AD$, $BP = \frac{2}{3}BF$, and $CP = \frac{2}{3}CE$. 
altitudes	**orthocenter**	THEOREM **THEOREM 5.8** ***Concurrency of Altitudes of a Triangle*** The lines containing the altitudes of a triangle are concurrent. If $\overline{AE}$, $\overline{BF}$, and $\overline{CD}$ are the altitudes of $\triangle ABC$, then the lines $\overleftrightarrow{AE}$, $\overleftrightarrow{BF}$, and $\overleftrightarrow{CD}$ intersect at some point H.