

Point of Concurrency

Circumcenter: \perp Bisectors (go through a midpoint and form a \perp)

circumcenter to the vertices are \cong

Incenter: Angle Bisectors (go through the vertex and bisect the angle)

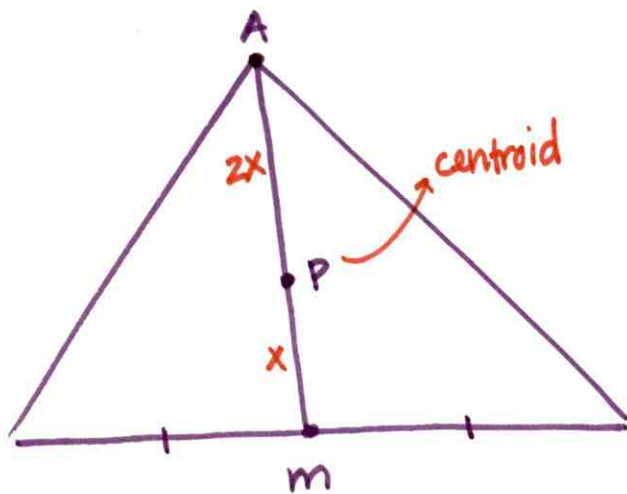
incenter to the sides (\perp) are \cong

Centroid: medians (goes from a vertex to a midpoint)

centroid to midpoint = $\frac{1}{3}$ (median) \rightarrow short

centroid to vertex = $\frac{2}{3}$ (median) \rightarrow medium

vertex to midpoint = median \rightarrow Long



Pm = short x
PA = medium 2x
AM = Long 3x

Orthocenter: Altitudes (goes from a vertex to the opposite base and form \perp)

Location

Acute Δ : inside

Right Δ : Right angle

Obtuse Δ : outside