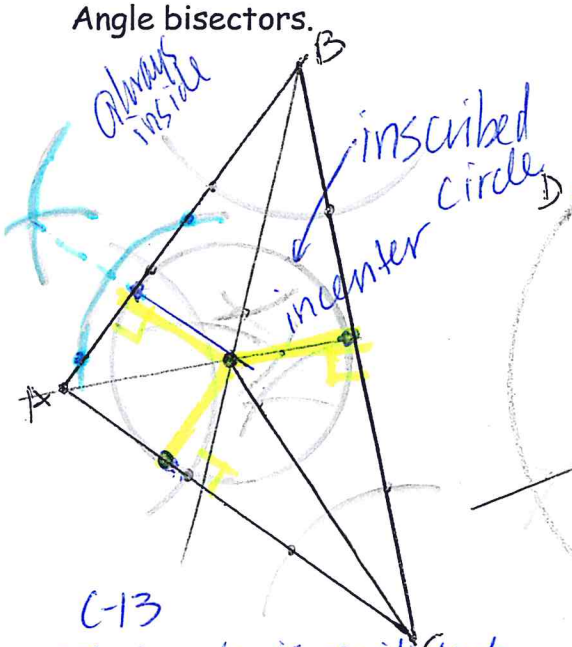
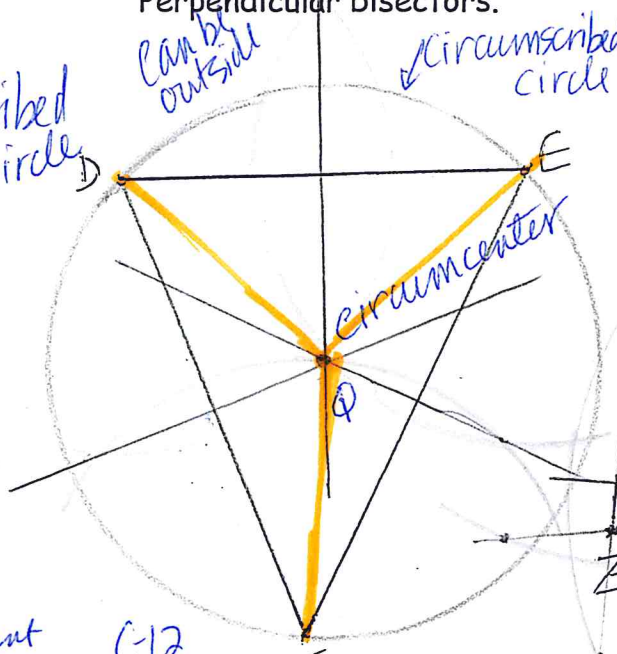
Notes 3.7 – Points of Concurrency

In ΔABC, construct all 3 Angle bisectors.



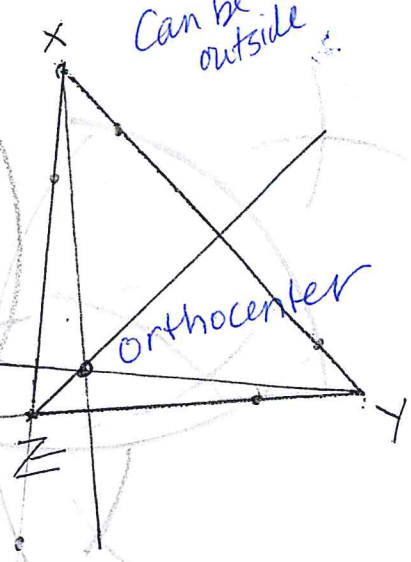
C-13
∴ The incenter is equidistant from the sides of the Δ.

In ΔDEF, construct all 3 Perpendicular bisectors.



C-12
∴ The circumcenter is equidistant from the vertices of the Δ.

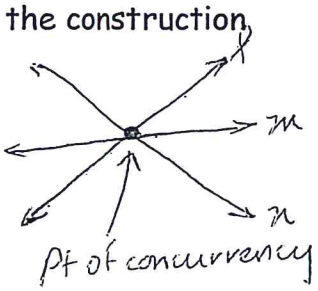
In ΔXYZ, construct all 3 Altitudes.
Hint: turn paper & construct altitude from Z first.



Read the definition of "concurrent lines" on p ~~170~~. What do you notice about each construction above? p176 old p. 184 new the 3 segments are concurrent

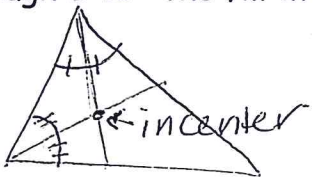
On ΔDEF above, label intersection Q. Put compass point on Q, lead on one vertex, and make a complete circle. What do you notice about the vertices of the triangle? they lie on the circle

This is called a "circumscribed circle". Copy definition and sketch from p ~~179~~. 67 new book p179 old
The prefix "circum" means "about" or "around". The center of your circle in the construction on ΔDEF is called the "circumcenter". Label it on your construction.
On ΔABC, the point of intersection is called the "incenter". Label it.
On ΔXYZ, the point of intersection is called the "orthocenter". Label it.
Also define:
"c" concurrent lines – three or more lines that intersect at a point (p 176) p184 new

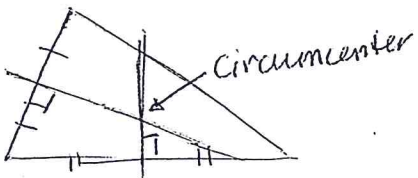


Write up conjectures 9-11 on pp 176-178. p 184-6 new
Go to your textbook and copy conjecture number, page number, conjecture title, and text.
C-9 through C-11 – the fill-in-the-blank is "are concurrent". Sketches below.

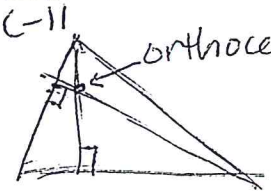
C-9



C-10



C-11



HW #~~14~~ – p ~~162: 1 or 2, 3; pp 180-1: 4-7, 12, 20-24, p 169: 1-3~~
(Total constructions on HW: ~~eight~~ seven) p167: 11, 13, 17, p171: 3, p175-6: 1-3
7, 8 1, 2