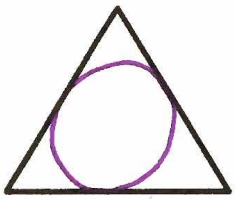
GEOMETRY—CONSTRUCTIONS: INSCRIBED AND CIRCUMSCRIBED CIRCLES

***For any triangle, you can draw an inscribed circle and a circumscribed circle.

Inscribed Circle:

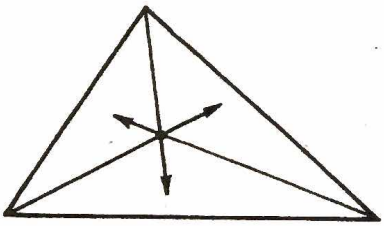


CIRCLE INSIDE △.

To construct an inscribed circle, you must:

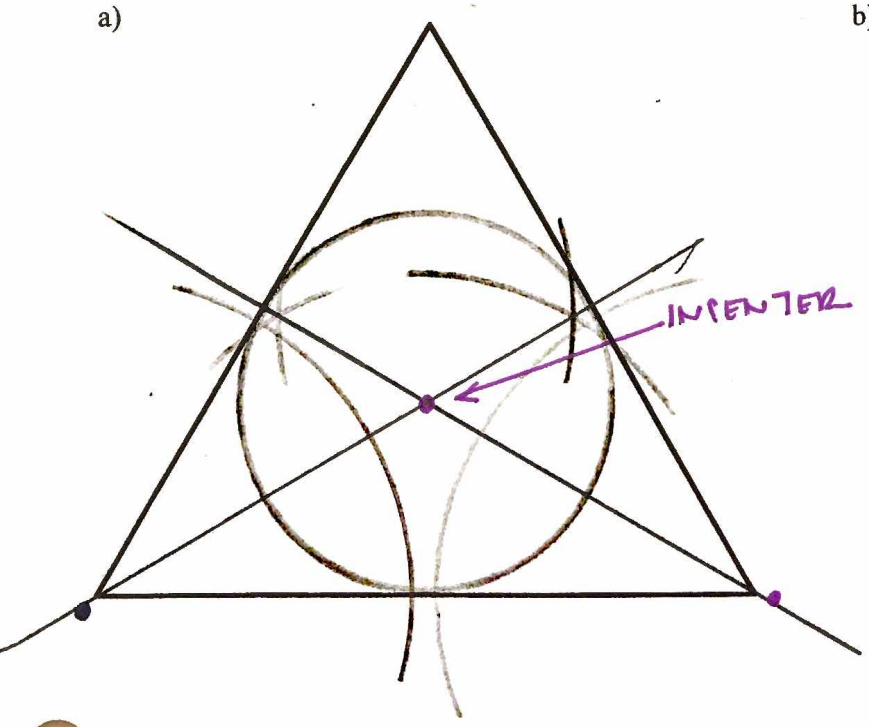
1. Construct at least two ANGLE BISECTORS.
2. Look for the point of intersection, called the INCENTER.
3. Put the needle of your compass on the INCENTER, open to any SIDE, and draw your circle INSIDE the triangle.

***The INCENTER is equidistant to all three SIDES.

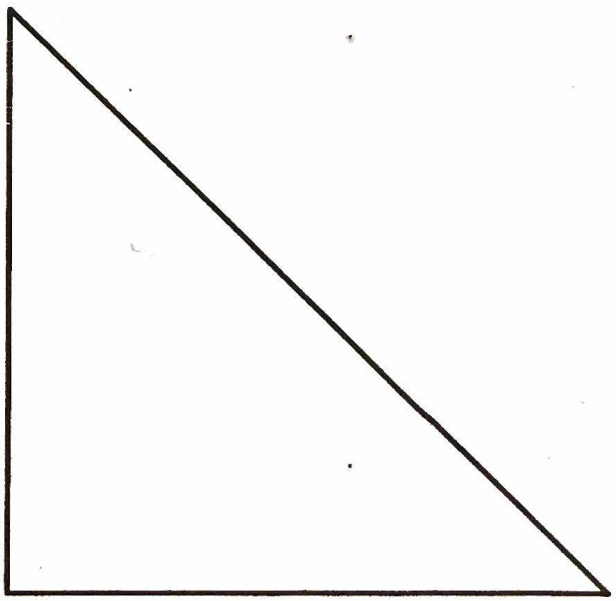


EX 1: Construct an inscribed circle.

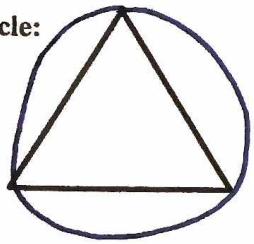
a)



b)



Circumscribed Circle:

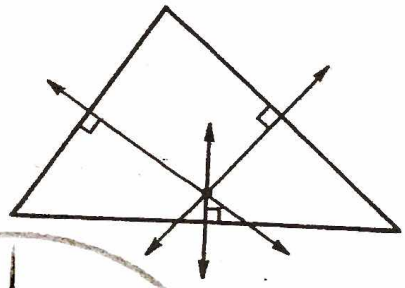


CIRCLE AROUND Δ.

To construct a circumscribed circle, you must:

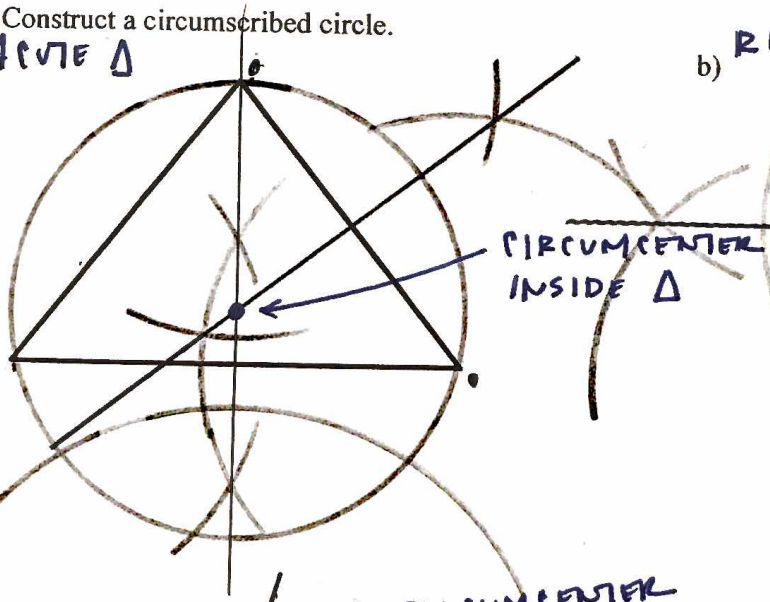
1. Construct at least two PERPENDICULAR BISECTORS.
2. Look for the point of intersection, called the CIRCUMCENTER.
3. Put the needle of your compass on the CIRCUMCENTER, open to any VERTEX, and draw your circle AROUND the triangle.

***The CIRCUMCENTER is equidistant to all three VERTICES.



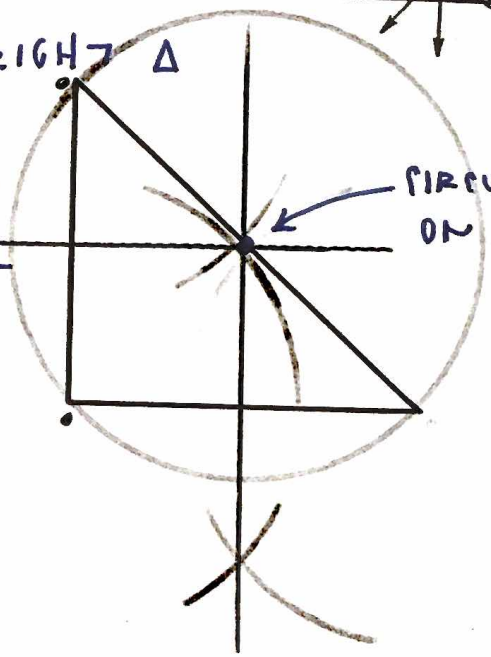
EX 1: Construct a circumscribed circle.

a) ACUTE Δ



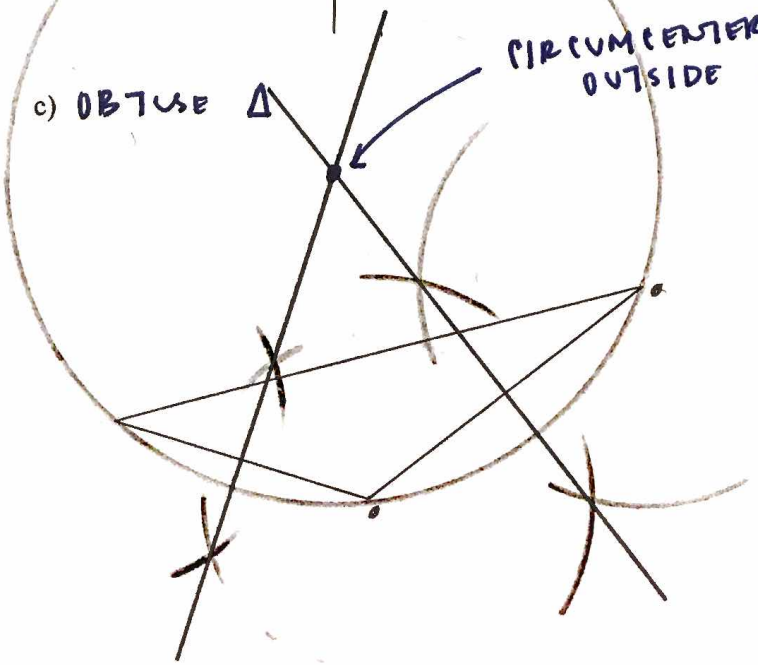
CIRCUMCENTER INSIDE Δ

b) RIGHT Δ



CIRCUMCENTER ON Δ

c) OBTUSE Δ



CIRCUMCENTER OUTSIDE Δ

d)