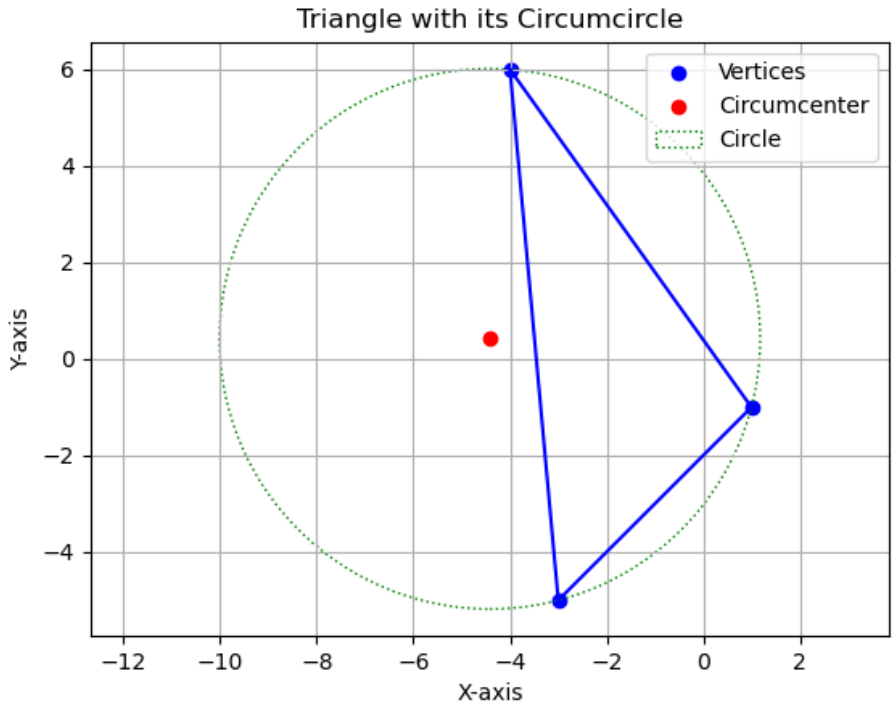

Draw the circle with centre at **O** and radius
R = OA
This is known as the circumradius

Solution:
Let OD, OE, OF are the perpendicular bisectors of the triangle of sides BC, CA, AB respectively
The point of intersection of OD and OE is **O**;
Therefore,

$$\mathbf{O} = \begin{pmatrix} \frac{-53}{12} \\ \frac{5}{12} \end{pmatrix} \tag{1}$$

Radius of circle with centre **O**

$$R = OA = \frac{\sqrt{4514}}{12} \tag{2}$$

Therefore;
The vector equation of circle is

$$\mathbf{r(t)} = \left(\frac{-53}{12} + \frac{\sqrt{4514}}{12} cos(t)\right)\hat{\mathbf{i}} + \left(\frac{5}{12} + \frac{\sqrt{4514}}{12} sin(t)\right)\hat{\mathbf{j}} \tag{3}$$

This circle is circumcircle.