



Draw the circle with centre at \mathbf{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 \mathbf{O} ;

Therefore,

$$\mathbf{O} = \left(\frac{-53}{12}, \frac{5}{12} \right) \quad (1)$$

Radius of circle with centre \mathbf{O} is

$$R = OA = \frac{\sqrt{4514}}{12} \quad (2)$$

\therefore The vector equation of circle is

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

This circle is circumcircle.