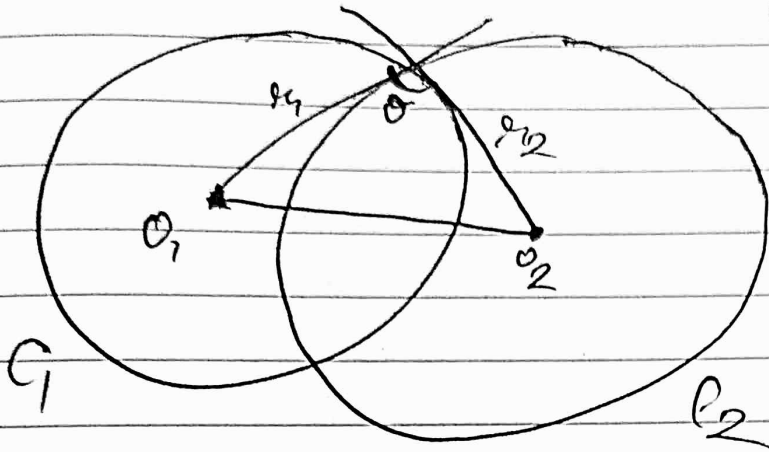


Notes :-

$$C_i \Rightarrow x^2 + y^2 + 2g_i x + 2f_i y + c_i = 0$$



Angle of intersection of 2 circles =

Angle between tangents at point of intersection

is θ so $\cos \theta = -\frac{(r_1^2 + r_2^2 - d^2)}{2r_1 r_2}$

$$\cos \theta = \frac{(c + c') - 2gg' - 2ff'}{2 \sqrt{g^2 + f^2 - c} \sqrt{g'^2 + f'^2 - c'}}$$

* If $\theta = \frac{\pi}{2} \Rightarrow \cos \theta = 0 \Rightarrow 2gg' + 2ff' = c + c'$

In this case, circles are orthogonal & tangent at P to one circle is normal to another circle.