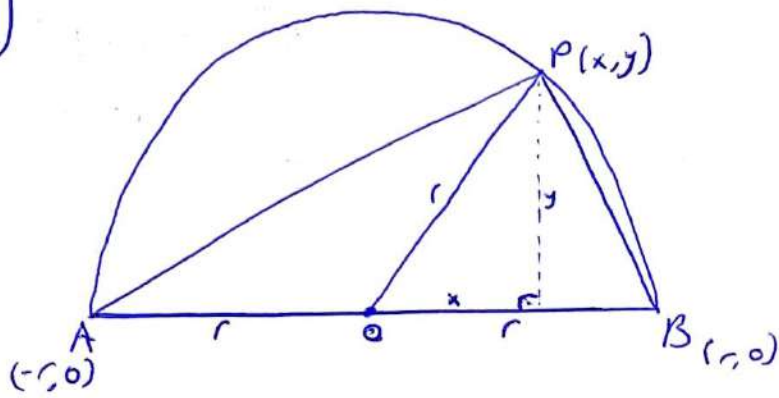11)

$$x^2 + y^2 = r^2$$

$$p \cdot q = |p| \cdot |q| \cdot \cos \theta$$

$$\vec{AP} = \vec{P} - \vec{A} = (x, y) - (-r, 0) = (x+r, y)$$

$$\vec{BP} = \vec{P} - \vec{B} = (x, y) - (r, 0) = (x-r, y)$$

$$\vec{AP} \cdot \vec{BP} = (x+r, y) \cdot (x-r, y) = (x^2 - r^2 + y^2)$$

$$= x^2 + y^2 - r^2$$

$$= r^2 - r^2$$

$$= 0$$

$$\cos(0) = 90°$$

PERPENDICULAR