Circles - Class XI

Related Questions with Solutions

Questions

Quetion: 01

The radius of the circle $(x\cos\theta + y\sin\theta - a)^2 + (x\sin\theta - y\cos\theta - b)^2 = k^2$ is

A. $a^2 + b^2 - k^2$
B. $a\sin\theta - b\cos\theta$
C. $a^2 + b^2$
D. k

Solutions

Solution: 01

The given equation can be written as

$x^2 + y^2 + a^2 + b^2 - 2(a\cos\theta + b\sin\theta)x + 2(-a\sin\theta + b\cos\theta)y - k^2 = 0$

Here $g = -a\cos\theta - b\sin\theta, f = -a\sin\theta + b\cos\theta, c = a^2 + b^2 - k^2$

Radius $= \sqrt{g^2 + f^2 - c} = \sqrt{a^2 + b^2 - a^2 - b^2 + k^2} = \sqrt{k^2} = k$

Correct Options

Answer:01
Correct Options: D