

Circles - Class XI

Related Questions with Solutions

Questions

Question: 01

The parametric equations of the circle $x^2 + y^2 + x + \sqrt{3}y = 0$ are

- A. $x = 1 + \cos \theta, y = \frac{\sqrt{3}}{2} + \sin \theta$
- B. $x = -\frac{1}{2} + \cos \theta, y = -\frac{\sqrt{3}}{2} + \sin \theta$
- C. $x = \frac{1}{2} + \cos \theta, y = -\frac{\sqrt{3}}{2} + \sin \theta$
- D. $x = \frac{1}{2} + \frac{1}{2} \cos \theta, y = \frac{\sqrt{3}}{2} + \frac{1}{2} \sin \theta$
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Solutions

Solution: 01

For a circle of the form, $(x - \alpha)^2 + (y - \beta)^2 = r^2$, the parametric equation of the circle is, $x = \alpha + r \cos \theta, y = \beta + r \sin \theta$

$x^2 + y^2 + x + \sqrt{3}y = 0$ has centre at $\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ and radius $= \sqrt{\frac{1}{4} + \frac{3}{4} - 0} = 1$

So, the parametric equations are,

$$x = -\frac{1}{2} + \cos \theta, y = -\frac{\sqrt{3}}{2} + \sin \theta$$

Correct Options

Answer:01

Correct Options: B