

$$\vec{r} = x\hat{i} + y\hat{j}$$

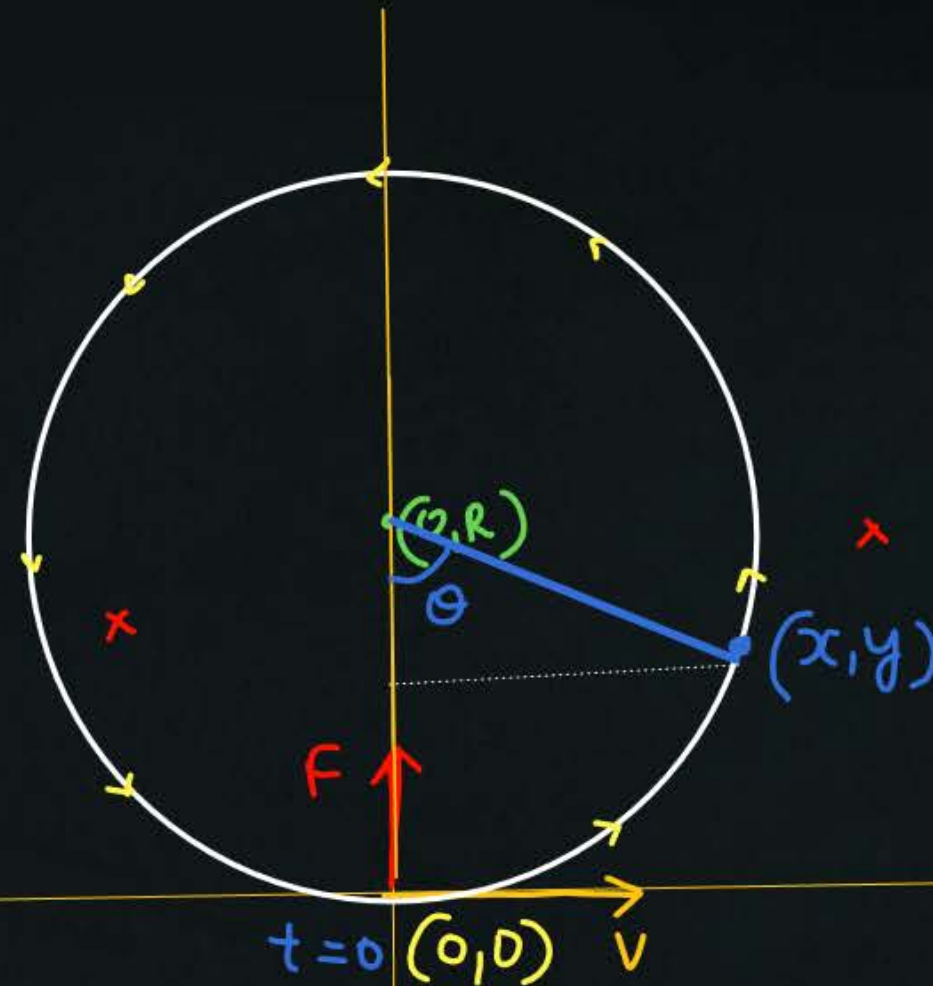
$$\vec{r} = (R\sin\theta)\hat{i} + (R - R\cos\theta)\hat{j}$$

$$\vec{r} = R\sin\omega t\hat{i} + (R - R\cos\omega t)\hat{j}$$

$$\vec{v} = \frac{d\vec{r}}{dt} = \omega R\cos\omega t\hat{i} + (R\omega\sin\omega t)\hat{j}$$

$$\vec{a} = \checkmark$$

$$F_{\text{net}} = \checkmark$$



$$x = R\sin\theta$$

$$y = R - R\cos\theta$$

$$\theta = \omega t$$

$$\theta = \frac{qB}{m} t$$

$$\vec{p} = m\vec{v}$$

Q

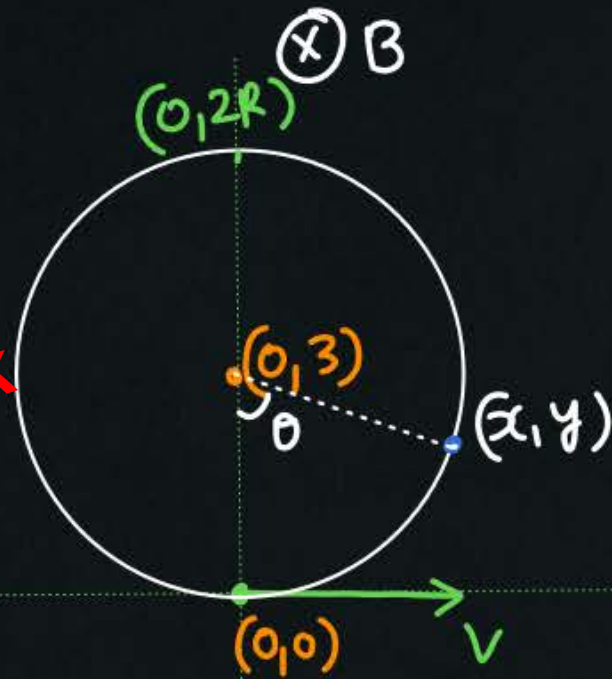
$$q = +2C$$

$$m = 3kg$$

$$B = 4T$$

$$u = 8m/s$$

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$$\text{Center} = (0, 3)$$

$$\theta = \omega t$$

$$x = R \sin \theta$$

$$y = R - R \cos \theta$$

$$\textcircled{1} \quad R = \frac{mu}{qB} = \frac{3 \times 8}{2 \times 4} = 3$$

$$\textcircled{3} \quad \omega = \frac{2\pi}{T} = \frac{8}{3}$$

$$\textcircled{5} \quad \vec{r} = \left(3 \sin \frac{8}{3}t \right) \hat{i} + \left(3 - 3 \cos \frac{8}{3}t \right) \hat{j}$$

$$\textcircled{2} \quad T = \frac{2\pi m}{qB} = \frac{2\pi \times 3}{2 \times 4}$$

$$\textcircled{4} \quad f = \frac{1}{T} = \frac{4}{3\pi}$$

$$\textcircled{6} \quad \text{max } y\text{-coordinate} = 2R = 6$$

$$\frac{2\pi \times 4}{3\pi}$$

$$= \frac{3\pi}{4}$$