

# Circular Motion

$$x \rightarrow \theta$$

$$v \rightarrow \omega$$

$$a \rightarrow \alpha$$

$$u \rightarrow \omega_0$$

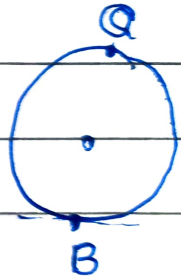
$$\text{no of revolution (n)} = \frac{\theta}{2\pi}$$

$$\omega = \frac{d\theta}{dt}, \quad \alpha = \frac{d\omega}{dt}$$

↳ for pure rolling

$$V = R\omega$$

$$V_Q = 2 V_{cm}$$

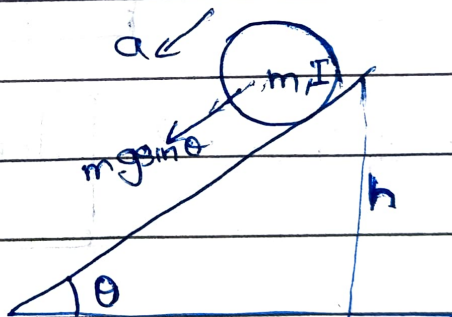


## ↳ Rotational kinetic energy

$$KE = \frac{1}{2} I \omega^2$$

↳ Some imp result,

$$a = \frac{mg \sin \theta}{m + \frac{I}{R^2}}$$



$$v = \sqrt{\frac{2gh}{1 + \frac{I}{MR^2}}}$$