Answer on Question #37839 - Physics – Mechanics | Kinematics | Dynamics

if a body is moving in a circular path with constant speed, what will be its acceleration constant or variable? please explain your answer in simple words.

Solution:

The magnitude of the centripetal acceleration in circular path is related to the tangential speed and angular velocity as follows:

$$a_c = \frac{V^2}{R}, V - \text{speed}, R - \text{radius}.$$

If $V = \text{constant} \Rightarrow V^2$ is constant and $R = \text{constant} \Rightarrow a_c$ will be constant.

Answer: acceleration will be constant.