Answer on Question #54200, Physics-Mechanics-Kinematics-Dynamics

How can I calculate the rotational acceleration vector of a circular motion where the tangential motion is constant?

Answer

The acceleration vector of a circular motion is

$$\bar{a} = \frac{dv}{dt}\bar{e}_t + \frac{v^2}{r}\overline{e_n},$$

where $\bar{e}_t$ is a unit vector tangent to the path pointing in the direction of motion at the chosen moment in time, $\overline{e_n}$ is a normal unit vector.

When the tangential motion is constant

$$\frac{dv}{dt} = 0 \rightarrow \bar{a} = \frac{v^2}{r}\overline{e_n}.$$