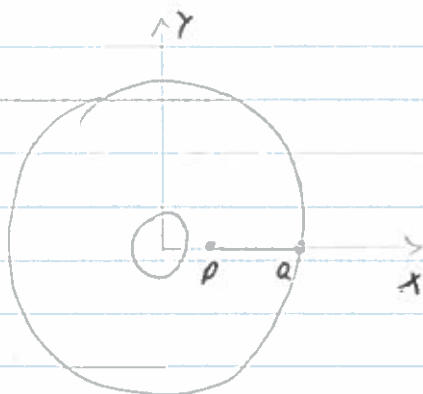


Ex 9-7
p285



$$\begin{aligned}\text{At } t_i = 0, \quad \omega_i &= 27.5 \text{ rad/s} \\ \theta_i &= 0 \text{ rad} \\ \alpha &= -10.0 \text{ rad/s}^2\end{aligned}$$

a/ Find ω_f at $t_f = 0.300 \text{ s}$ $\Delta t = t_f - t_i = 0.300 \text{ s}$

$$\begin{aligned}\omega_f &= \omega_i + \alpha \Delta t \\ &= (27.5 \text{ rad/s}) + (-10.0 \text{ rad/s}^2)(0.300 \text{ s})\end{aligned}$$

$$\underline{\omega_f = 24.5 \text{ rad/s}}$$

b/ First find $\Delta \theta$ after $\Delta t_f = 0.300 \text{ s}$

$$\begin{aligned}\Delta \theta &= \omega_i \Delta t + \frac{1}{2} \alpha \Delta t^2 \\ &= (24.5 \text{ rad/s})(0.300 \text{ s}) + \frac{1}{2} (-10.0 \text{ rad/s}^2)(0.300 \text{ s})^2\end{aligned}$$

$$\Delta \theta = 7.80 \text{ rad} = 7.80 \text{ rad} \left(\frac{1 \text{ rev}}{2\pi \text{ rad}} \right) = 1.24 \text{ rev}$$

$$\text{Total angle in degrees: } \Delta \theta^\circ = (360^\circ)(1.24) = 446.4^\circ$$

$$\text{Angle from PQ at } t=0 : \theta = 446.4^\circ - 360^\circ$$

$$\underline{\theta = 86.4^\circ}$$

