

86. Using Eq. 11-12, we have

$$\omega = \omega_0 + \alpha t \implies \alpha = \frac{2.6 - 8.0}{3.0}$$

which yields $\alpha = -1.8 \text{ rad/s}^2$. Using this value in Eq. 11-14 leads to

$$\omega^2 = \omega_0^2 + 2\alpha\theta \implies \theta = \frac{0^2 - 8.0^2}{2(-1.8)} = 18 \text{ rad} .$$