

102. (a) Using Eq. 11-1, the angular displacement is

$$\theta = \frac{5.6 \text{ m}}{8.0 \times 10^{-2} \text{ m}} = 1.4 \times 10^2 \text{ rad} .$$

(b) We use $\theta = \frac{1}{2}\alpha t^2$ (Eq. 11-13) to obtain t :

$$t = \sqrt{\frac{2\theta}{\alpha}} = \sqrt{\frac{2(1.4 \times 10^2 \text{ rad})}{1.5 \text{ rad/s}^2}} = 14 \text{ s} .$$