

11. We apply Eq. 11-12 twice, assuming the sense of rotation is positive. We have $\omega > 0$ and $\alpha < 0$. Since the angular velocity at $t = 1$ min is $\omega_1 = (0.90)(250) = 225$ rev/min, we have

$$\omega_1 = \omega_0 + \alpha t \implies \alpha = \frac{225 - 250}{1} = -25 \text{ rev/min}^2 .$$

Next, between $t = 1$ min and $t = 2$ min we have the interval $\Delta t = 1$ min. Consequently, the angular velocity at $t = 2$ min is

$$\omega_2 = \omega_1 + \alpha \Delta t = 225 + (-25)(1) = 200 \text{ rev/min} .$$