

HW 12-2

$$3450 \frac{\text{rev}}{\text{min}} \times \frac{2\pi \text{rad}}{\text{rev}} \times \frac{\text{min}}{60\text{s}} = 361.3 \frac{\text{rad}}{\text{s}}$$

$$\omega_f^2 - \omega_0^2 = 2\alpha \Delta\theta \quad \leftarrow 47.5 \text{ rotations} \times \frac{2\pi \text{rad}}{\text{rot.}} = 298.45$$

$$0 - 361.3^2 = 2\alpha(298.45)$$

$$\underline{\underline{-218.7 \frac{\text{rad}}{\text{s}^2} = \alpha}}$$

$$\omega_f = \omega_0 + \alpha t$$

$$0 = 361.3 + (-218.7)t$$

$$t = \frac{361.3}{218.7} = \underline{\underline{1.65\text{s}}}$$