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$t = 0.10^s$, $m = 19^{\text{kg}}$, $k = 0.25^{\text{m}}$, $\omega_1 = 0$: FIND ω_2

$$M = (100^{\text{N}})(0.460^{\text{m}}) = 46.0^{\text{N}\cdot\text{m}}$$



ANGULAR MOMENTUM ABOUT A \uparrow :

$$-I\omega_1 - Mt = -I\omega_2$$

$$\omega_2 = \frac{Mt}{I}$$

$$I = mk^2$$

$$\omega_2 = \frac{Mt}{mk^2} = \frac{(46.0^{\text{N}\cdot\text{m}})(0.10^{\text{s}})}{(19^{\text{kg}})(0.25^{\text{m}})^2} \cdot \left(\frac{\text{kg}\cdot\text{m}}{\text{N}\cdot\text{s}^2}\right)$$

$$\omega_2 = 3.874 \frac{\text{RAD}}{\text{s}}$$