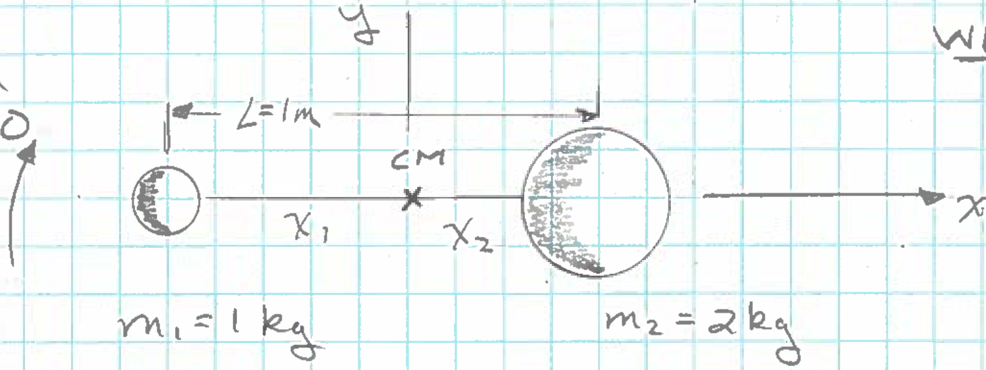
$\omega_0 = -20\,\text{rpm}$
$\longrightarrow \omega_f = 0$
in $\Delta t = 5\,\text{s}$



First, find location of masses relative to CM:

$$x_{CM} = 0 = \frac{m_1 x_1 + m_2 x_2}{M} \qquad (x_1 \,\&\, x_2 \text{ are coordinates})$$

And,

$$x_2 - x_1 = L \Rightarrow x_2 = L + x_1$$

So,

$$m_1 x_1 + m_2 (L + x_1) = 0$$

$$m_1 x_1 + m_2 L + m_2 x_1 = 0$$

So:

$$x_1 = \frac{-m_2 L}{m_1 + m_2} = -0.667\,\text{m}$$

$$x_2 = L + x_1 = 0.333\,\text{m}$$

Now, moment of inertia about CM:

$$I = \sum_{i=1}^{2} m_i r_i^2 = m_1 (x_1)^2 + m_2 (x_2)^2 = 0.667\,\text{kg}\,\text{m}^2$$

Now, from kinematics (assume α = constant)

$$\omega_f = \omega_0 + \alpha \Delta t \qquad \omega_0 = -20\,\text{rpm}\left(\frac{2\pi\,\text{rad}}{1\,\text{rev}}\right)\left(\frac{1\,\text{min}}{60\,\text{s}}\right)$$

$$\alpha = \frac{-\omega_0}{\Delta t} = 0.4189\,\frac{\text{rad}}{\text{s}^2} \qquad = -2.094\,\text{rad/s}$$

Finally,

$$\tau = I\alpha = 0.2794\,\text{Nm}$$

Torque has magnitude 0.2794 Nm and is CCW.