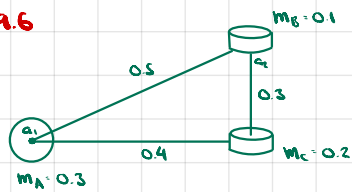


Ex 9.6



$$I_{a_1} = 0.1 \cdot 0.5^2 + 0.3 \cdot 0.4^2 = \frac{1}{40} + \frac{16}{100} \cdot \frac{1}{5} = \frac{57}{1000}$$

$$I_{a_2} = 0.3 \cdot 0.4^2 = \frac{6}{125} = \frac{48}{1000}$$

rotation about a_1 w/ $\omega = 4 \text{ rad/s}$

$$K = \frac{0.1 \cdot 0.5 \cdot 16}{2} + \frac{0.3 \cdot 0.4 \cdot 16}{2} = \frac{1}{2} \cdot 16 \cdot I_{a_1} = \frac{1}{2} I_{a_1} \omega^2$$

$$= \frac{1}{2} \cdot \frac{57}{1000} \cdot 16 = \frac{57}{125} = 0.46 \text{ J}$$

Ex 9.7



$$I_s = \frac{m_c R^2}{2} = \frac{50 \cdot 0.0036}{2} = 0.09$$

$$E_i = 0$$

$$E_f = \frac{1}{2} I_s \omega^2$$

$$W_T = \int_0^2 9 dx = 18 \text{ J} = \frac{1}{2} \cdot 0.09 \omega^2$$

$$\omega = 20 \text{ rad/s}$$

$$v = 20 \cdot 0.06 = 1.2 \text{ m/s}$$