

$A_0A = r = 250 \text{ mm}$ (krank kolu)
 $AB = L = 1450 \text{ mm}$ (biyel kolu)
 $m_2 = 8 \text{ kg}$
 $m_3 = 4 \text{ kg}$

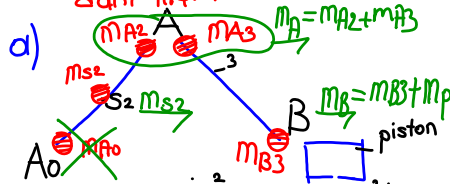
$$x_B = r \cos \theta + L \left(1 - \frac{r^2}{2L^2} \sin^2 \theta\right)$$

a) S_2, A, B

$$I_{A_0}^*(\omega) = ?, Q(\omega) = ?$$

b) Hareket denk.?

c) Denge halinde, M ve Farasin-
daki ilişki?

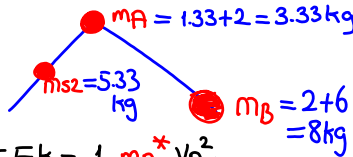


$$m_{A2} = m_{A0} = \frac{I_{S2}}{A \cdot L} \cdot m_2 = \frac{250^2/12}{125 \cdot 250} \cdot 8 = 1.33 \text{ kg}$$

$$m_{S2} = \left(1 - \frac{I_{S2}}{A \cdot L}\right) \cdot m_2 = \left(1 - \frac{250^2/12}{125 \cdot 250}\right) \cdot 8 = 5.33 \text{ kg}$$

$$I_{S2} = \frac{1}{12} m_2 L^2 = \frac{1}{12} \cdot 8 \cdot 250^2$$

$$m_{A3} = m_{B3} = \frac{125 \cdot 4}{250} = 2 \text{ kg}$$



$$\Sigma E_k = \frac{1}{2} m_A^* V_A^2 = E_{k, m_A} + E_{k, m_B} + E_{k, m_{S2}}$$

$$\frac{1}{2} m_A^* (\dot{\omega} r)^2 = \frac{1}{2} m_A (\dot{\omega} r)^2 + \frac{1}{2} m_B (\dot{x}_B)^2 + \frac{1}{2} m_{S2} \left(\frac{r}{2} \dot{\omega}\right)^2$$

$$m_A^* = m_A + \frac{1}{4} m_{S2} + m_B \left(\frac{r \sin \theta}{2L}\right)^2$$

$$I_{A_0}^* = m_A^* \cdot r^2 = m_A \cdot r^2 + \frac{1}{4} m_{S2} r^2 + m_B \left(\frac{r \sin \theta}{2L}\right)^2 r^2$$

$$Q(\omega) = M_2 \delta \omega + F \delta x_B = M_2 \delta \omega + F \left(-r \sin \theta \delta \omega - \frac{r^2}{2L} 2 \sin \theta \cos \theta \delta \omega\right)$$

$$\frac{d^2 Q}{d\omega^2} = \delta(\omega) \left(M_2 - F r \sin \theta - \frac{F r^2}{2L} 2 \sin \theta \cos \theta\right)$$

$$V = \frac{1}{2} k x_B^2$$

$$\frac{dV}{d\omega} = k \left(r \cos \theta + L \left(1 - \frac{r^2}{2L^2} \sin^2 \theta\right)\right) (-r \sin \theta - \frac{r^2}{L} \sin \theta \cos \theta)$$

$$\text{Denge} \Rightarrow Q(\omega) = 0$$

$$M_2 = F r \sin \theta + \frac{F r^2}{L} \sin \theta \cos \theta$$