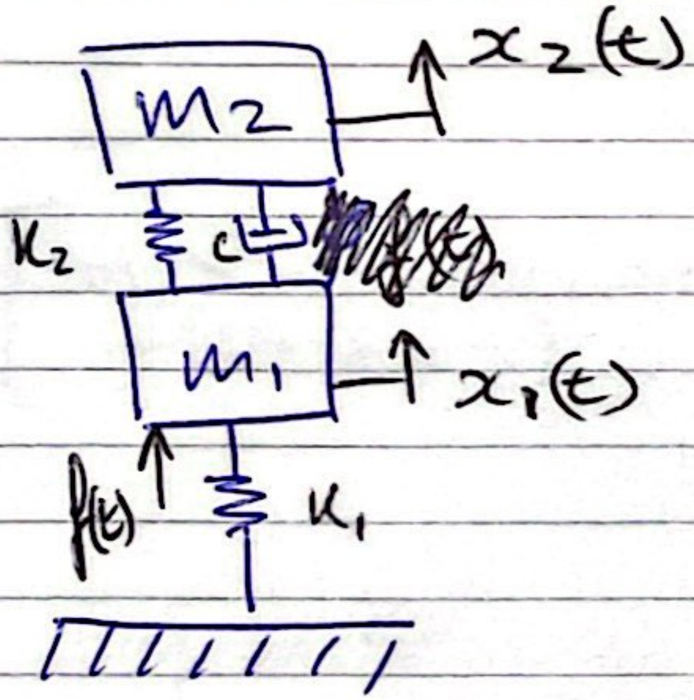
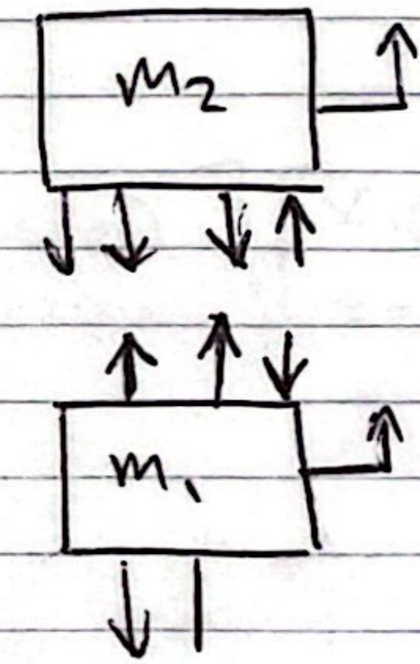
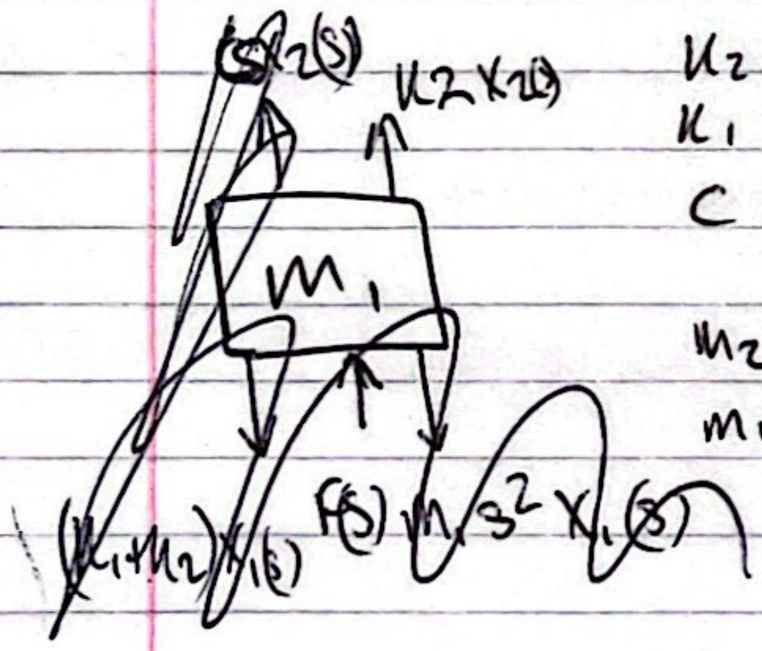
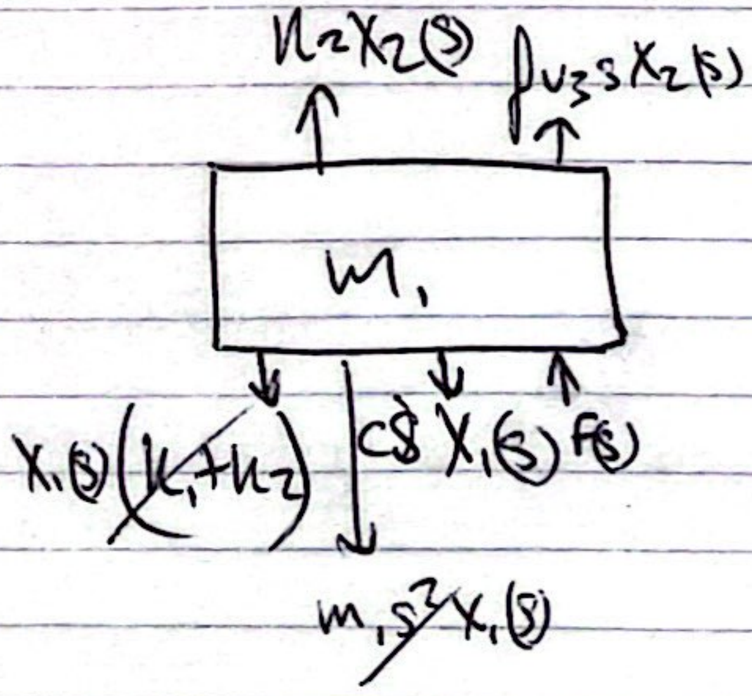


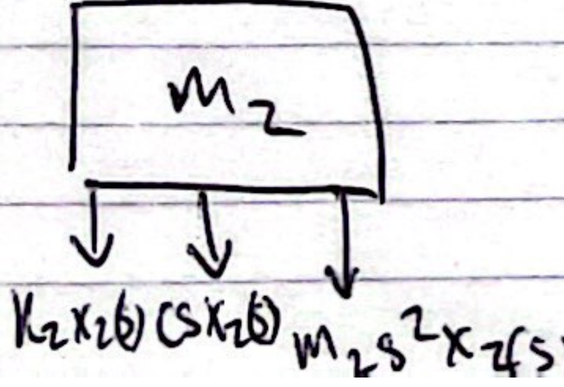




$k_2 = 168,2$
$k_1 = 190\,000$
$c = 1000$

$m_2 = 300$
$m_1 = 50$





$$m_1 s^2 X_1(s) + (k_1 + k_2) X_1(s) + cs\, X_1(s) = F(s) + k_2 X_2(s) + cs\, X_2(s)$$

$$(m_1 s^2 + k_1 + k_2 + cs) X_1(s) - (cs + k_2) X_2 = F(s)$$

$$m_2 s^2 X_2(s) + cs\, X_2(s) + k_2 X_2(s) = cs\, X_1(s) + k_2 X_1(s)$$

$$-(cs + k_2) X_1(s) + (m_2 s^2 + cs + k_2) X_2(s) = 0$$

$$\begin{bmatrix} m_1 s^2 + k_1 + k_2 + cs & -(cs + k_2) \\ -(cs + k_2) & m_2 s^2 + cs + k_2 \end{bmatrix} \begin{bmatrix} X_1(s) \\ X_2(s) \end{bmatrix} = \begin{bmatrix} f(s) \\ 0 \end{bmatrix}$$

$$X_2 = \frac{\begin{bmatrix} m_1 s^2 + k_1 + k_2 + cs & F(s) \\ -cs + k_2 & 0 \end{bmatrix}}{\begin{bmatrix} m_1 s^2 + k_1 + k_2 + cs & -cs + k_2 \\ -(cs + k_2) & m_2 s^2 + cs + k_2 \end{bmatrix}}$$

$$\frac{X_2}{F(s)} = \frac{0 - (-(cs + k_2))}{(m_1 s^2 + k_1 + k_2 + cs)(m_2 s^2 + cs + k_2) + (-cs + k_2)(-cs + k_2)}$$

$$\frac{X_2(s)}{F(s)} = \frac{cs + k_2}{(m_1 s^2 + k_1 + k_2 + cs)(m_2 s^2 + cs + k_2) - (-(cs+k_2))(-(cs+k_2))}$$

$$= \frac{(\cdots)}{(\cdots) - (cs+k_2)^2}$$

$$\frac{X_2}{F(s)} = \frac{1000s + 16812}{(50s^2 + 1000s + 206812)(300s^2 + 1000s + 16812) - (1000s + 16812)^2}$$

$$= \frac{250s + 4203}{2(1875s^4 + 43750s^3 + 7860525s^2 + 237500000s + 3492850000)}$$