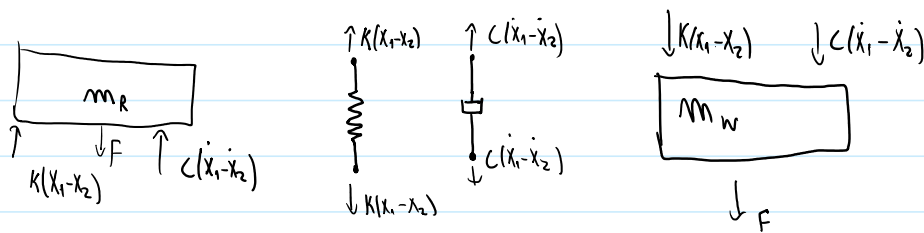
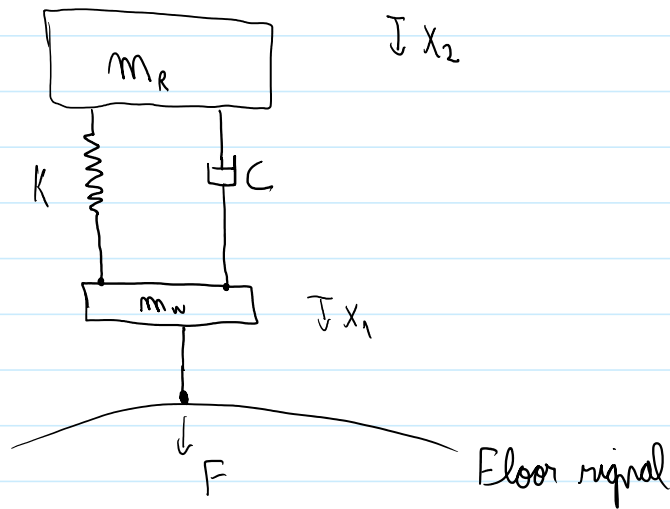


## Project task 2

July 20, 2025 12:42 PM



$$m_R \ddot{x}_2 = -K(x_1 - x_2) - C(\dot{x}_1 - \dot{x}_2) + f$$

$$m_w \ddot{x}_1 = K(x_1 - x_2) + C(\dot{x}_1 - \dot{x}_2) + f$$

$$m_R \ddot{x}_2 + C\dot{x}_2 + Kx_2 = Kx_1 + C\dot{x}_1 + f$$

$$m_w \ddot{x}_1 - C\dot{x}_1 - Kx_1 = -Kx_2 - C\dot{x}_2 + f$$

↓  
Laplace  
↓

↓ Laplace

$$m_R s^2 x_2 + C s x_2 + K x_2 = K x_1 + C s x_1 + f$$

$$m_w s^2 x_1 = -K(x_1 - x_2) - C s(x_1 - x_2) + f$$

$$x_2 = \frac{1}{m_R} \frac{1}{s} \frac{1}{s} (-K(x_1 - x_2) - C s(x_1 - x_2) + f) \quad (1)$$

$$x_1 = \frac{1}{m_w} \frac{1}{s} \frac{1}{s} (K(x_1 - x_2) - C s(x_1 - x_2) + f) \quad (2)$$

Input:  $F$   
Output  $x_1, x_2$

