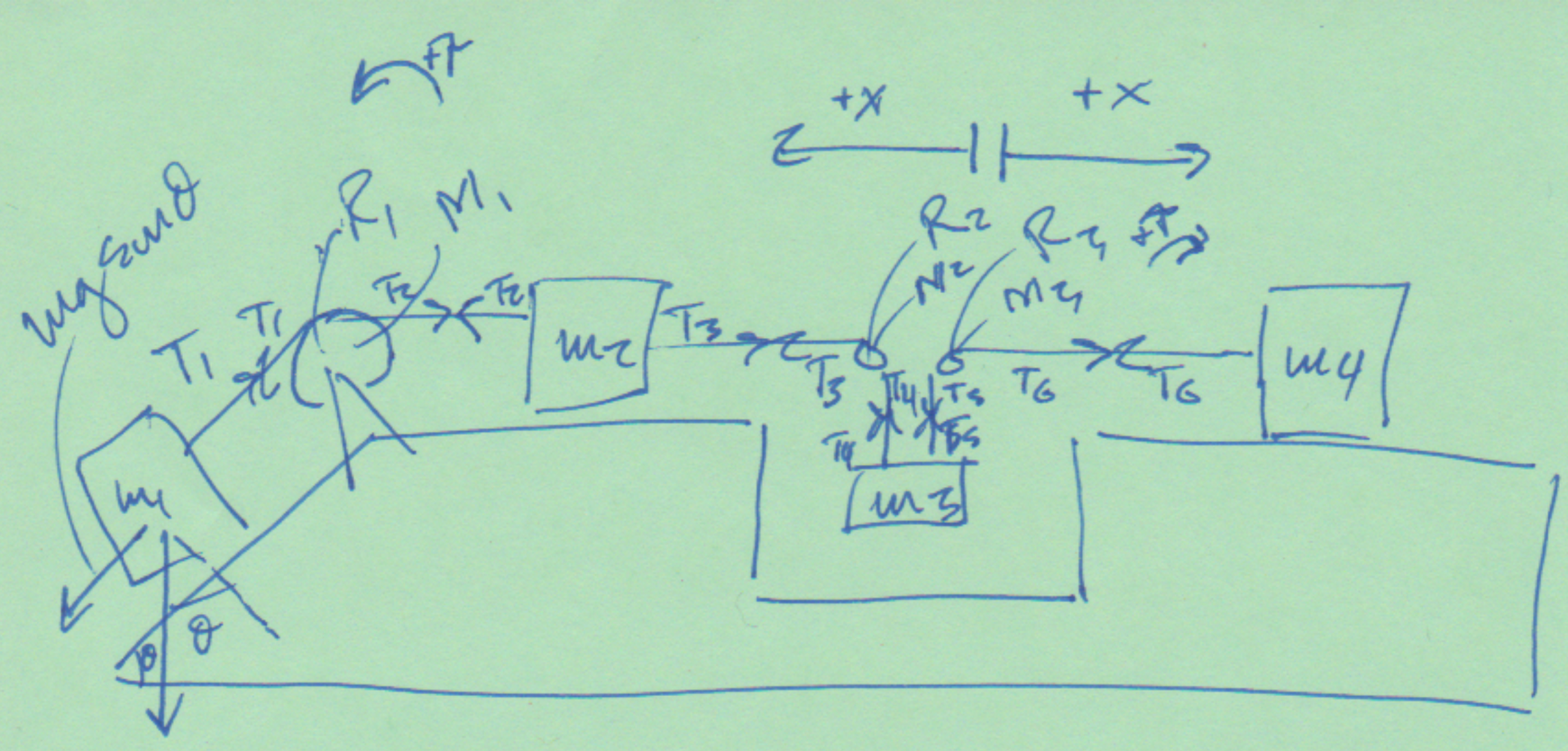

Blocks:

$$m_1 a = m_1 g \sin\theta - T_1$$

$$m_2 a = T_2 - T_3$$

$$m_3 a = T_4 + T_5 - m_3 g$$

$$m_4 a = -T_6$$

pulleys: $I_{pully} = \frac{1}{2} M R^2$, $R\alpha = a \Rightarrow \alpha = \frac{a}{R}$

$$I_1 \alpha = R_1 T_1 - R_1 T_2 \Rightarrow \tfrac{1}{2} M_1 R_1^{\cancel{2}} \tfrac{a}{\cancel{R_1}} = \cancel{R_1} T_1 - \cancel{R_1} T_2$$

$$I_2 \alpha = R_2 T_3 - R_2 T_4 \Rightarrow \tfrac{1}{2} M_2 R_2^{\cancel{2}} \tfrac{a}{\cancel{R_2}} = \cancel{R_2} T_3 - \cancel{R_2} T_4$$

$$I_3 \alpha = R_3 T_6 - R_3 T_5 \Rightarrow \tfrac{1}{2} M_3 R_3^{\cancel{2}} \tfrac{a}{\cancel{R_3}} = \cancel{R_3} T_6 - \cancel{R_3} T_5$$

$$m_1 a = m_1 g \sin\theta - \cancel{T_1}$$
$$m_2 a = \cancel{T_2} - \cancel{T_3}$$
$$m_3 a = \cancel{T_4} + \cancel{T_5} - m_3 g$$
$$\tfrac{1}{2} M_1 a = \cancel{T_1} - \cancel{T_2}$$
$$\tfrac{1}{2} M_2 a = \cancel{T_3} - \cancel{T_4}$$
$$\tfrac{1}{2} M_3 a = \cancel{T_6} - \cancel{T_5}$$
$$+ \quad m_4 a = -\cancel{T_6}$$

$$a_T = \frac{m_1 g \sin\theta - m_3 g}{\sum m_i + \frac{1}{2}\sum M_j} \overset{\text{note}}{<} \frac{m_1 g \sin\theta - m_3 g}{\sum m_i} \quad \text{if } \forall M_j \neq 0 \text{ (w/o correction)}$$