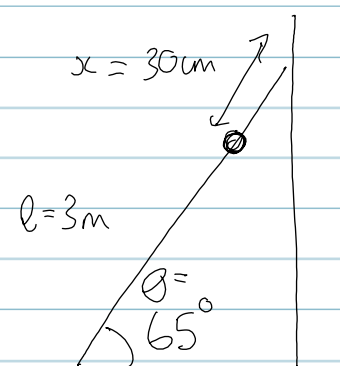
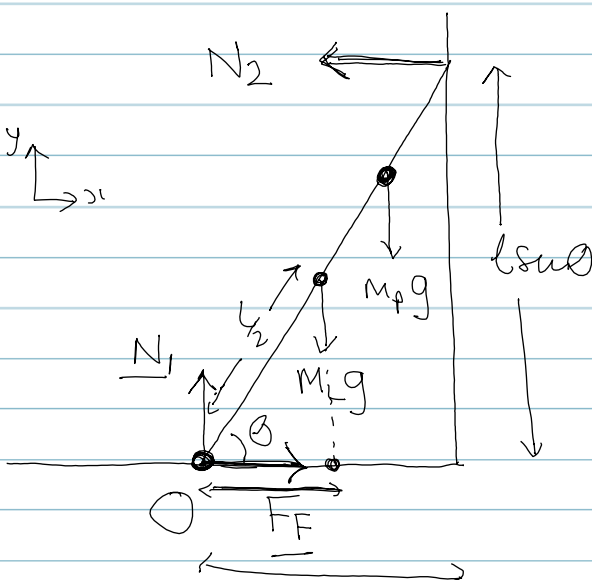


Ladder + paint can problem



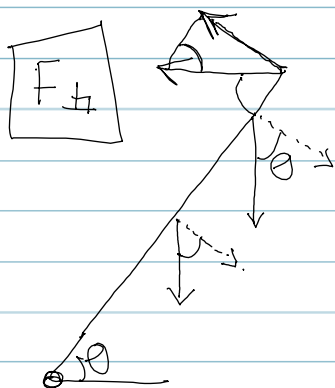
Find force on ladder from wall. (N_2)



r_{\perp}

Clockwise torques $\rightarrow m_L g \frac{l}{2} \cos \theta + m_p g (l-x) \cos \theta$

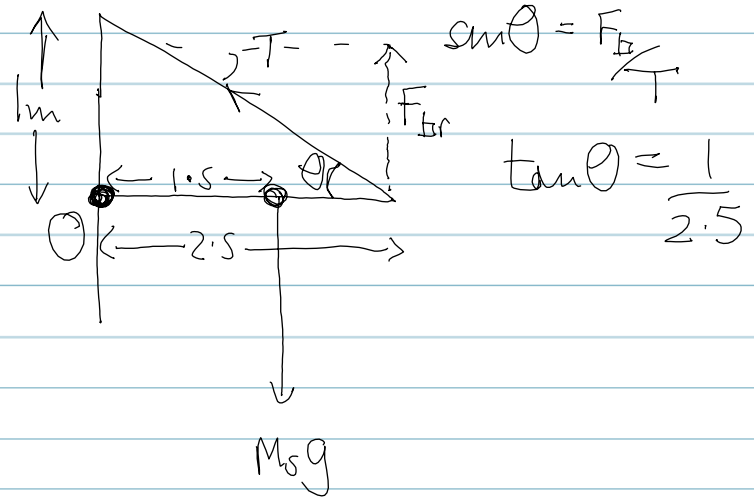
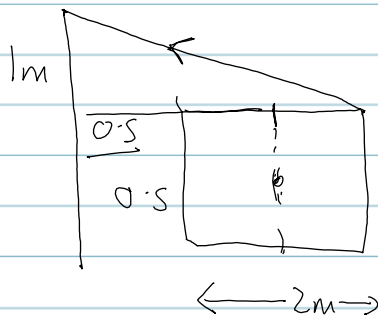
Anticlockwise torques $N_2 l \sin \theta$



$$m_L g \cos \theta \frac{l}{2} + m_p g \cos \theta (l-x) = N_2 \sin \theta l$$

$$N_2 = \frac{m_L g \cancel{\cos \theta} \frac{l}{2} + m_p g \cancel{\cos \theta} (l-x)}{\cancel{\sin \theta} l} = 42.5 \text{ N}$$

Sign



Torques about O .

$$15 \times g \times 1.5 = T \sin \theta$$

$$T = 594 \text{ N}$$