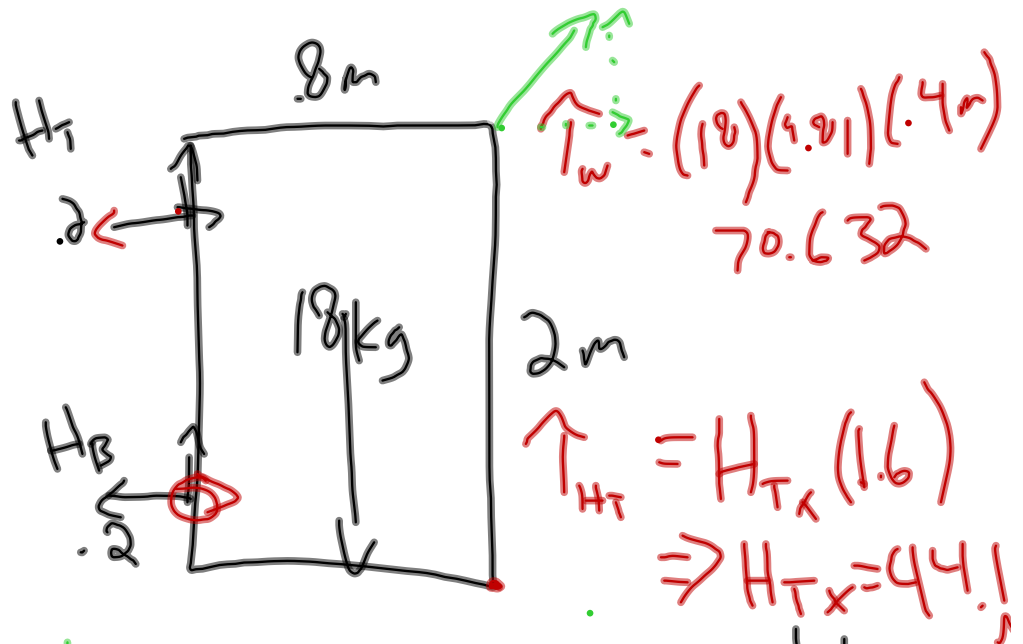


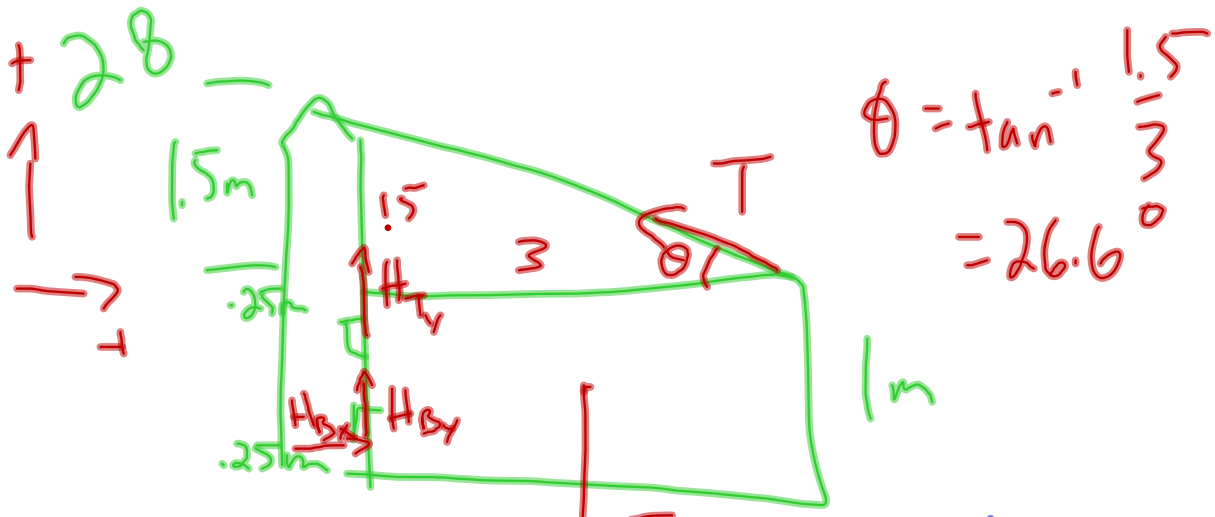
#22



$$\sum F_y = 0 - (18)(9.81) + H_{Ty} + H_{By} = 0$$
$$H_y = 88.3 \text{ N}$$

$$H_{Tx} - H_{Bx} = 0$$

$$\sum \tau = 0$$



$$\theta = \tan^{-1} \frac{1.5}{3} = 26.6^\circ$$

$$\sum F_x$$

$$-F_g (1.5)$$

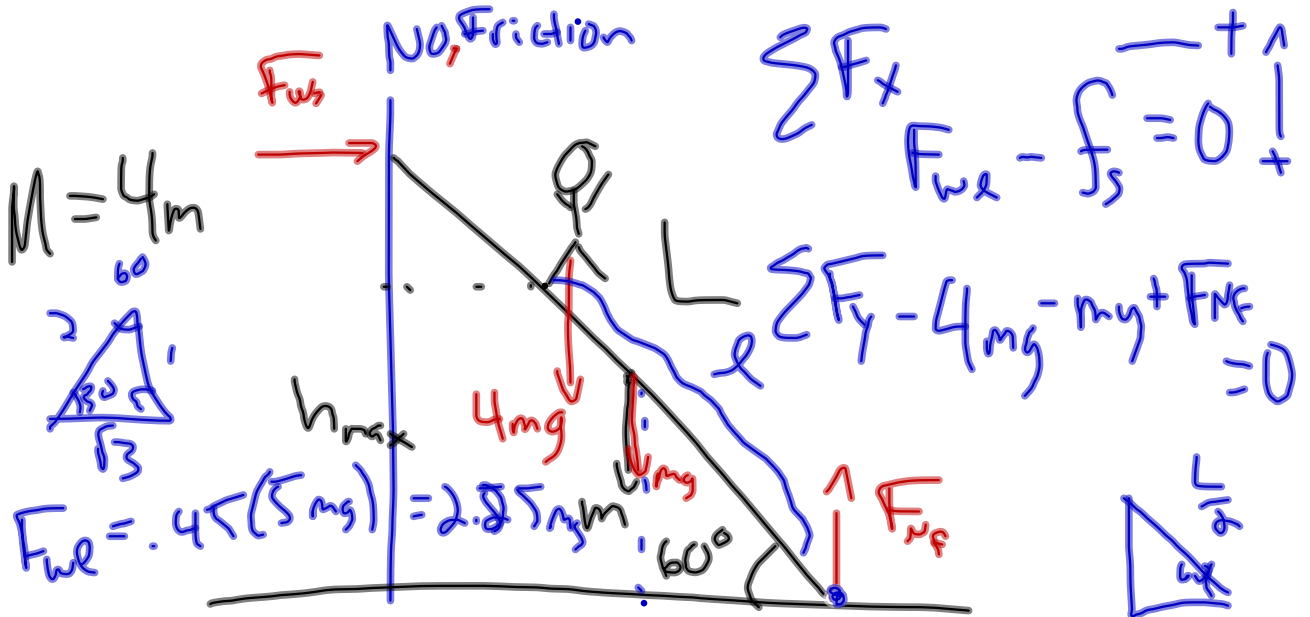
$$T \sin \theta (3)$$

$$T \cos \theta (.75)$$

$$\sum F_y \quad H_{Bx} - T \cos \theta = 0$$

$$\sum F_y \quad T \sin \theta + H_{Ay} + H_{By} - F_g = 0$$

$$\sum \tau_{HS}$$



$$\sum F_x \quad \leftarrow + \quad \rightarrow +$$

$$F_{we} - f_s = 0$$

$$\sum F_y - 4mg - mg + F_{NF} = 0$$

$$F_{we} = .45(5mg) = 2.25mg$$



$$F_{we} - .45 F_{NF} = 0$$

$$M_s = .45 \cos 60$$

$$x = \frac{l}{2} \cos 60$$

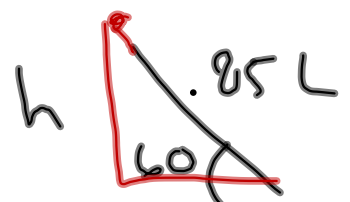
$$F_{NF} - 5mg = 0 \Rightarrow F_{NF} = 5mg$$

$$- F_{we} L \sin 60 + mg \frac{l}{2} \cos 60 + 4mg \frac{l}{2} \cos 60 = 0$$

$$- 2.25mgL \left(\frac{\sqrt{3}}{2}\right) + \frac{1}{4}mgL + 2mgL = 0$$

$$-1.95L + .25L + 2L = 0$$

$$l = \frac{1.7L}{2} = .85L$$



$$h = .85L \sin 60 = \frac{\sqrt{3}}{2} (.85L) = .74L$$