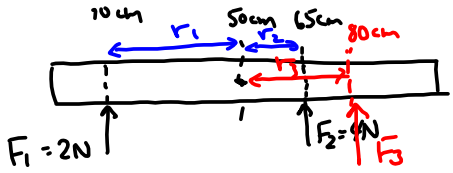


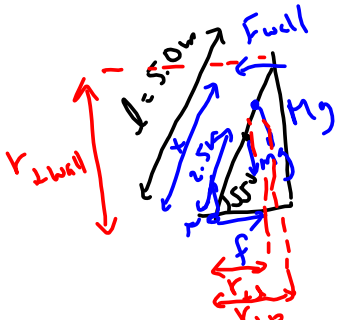
a) $\Sigma\tau = \tau_{cw} - \tau_{ccw}$

$= 2N \cdot 0.40m - 4N(0.15m)$

$= 0.2\,Nm\ cw$

b) $\tau_3 = F_3 r_3 = 0.20\,Nm\ ccw$

$F_3 = \frac{0.20Nm}{0.30m} = 0.67\,N$ upward.



$\frac{2}{3}N$

$\Sigma F = \odot$ $f = F_{wall} = \mu N = (0.30)(932)$

$= 279\,N$

$mg + Mg = N = 932N$

$r_{1l} = 2.5m \cos 55°$

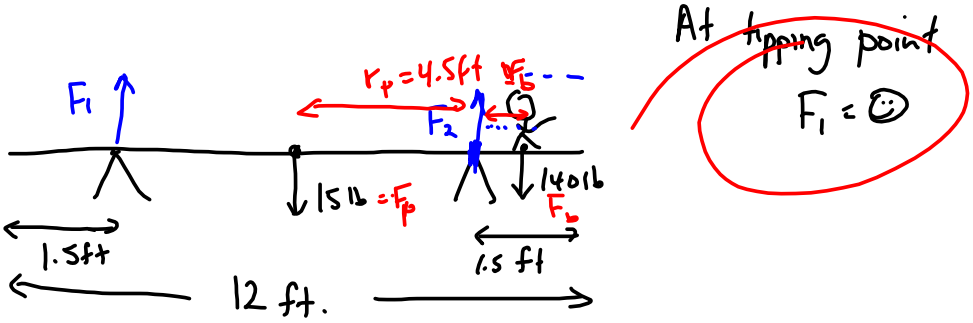
$r_{1p} = x \cos 55°$

$r_{1wall} = 5 \sin 55°$

$\Sigma\tau_A = \odot$ $\Sigma\tau_{cw} = \Sigma\tau_{ccw}$

$mg \cdot r_{1l} + Mg \cdot r_{1p} = F_{wall}\, r_{1wall}$

$x = 2.05m$



$$\Sigma \tau = ☺$$

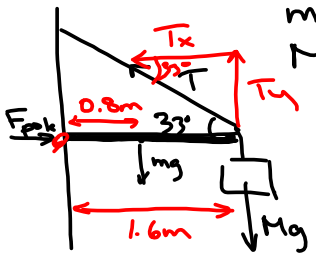
$$\tau_{cw} = \tau_{ccw}$$

$$Mg \cdot r_b = mg \cdot r_p$$

$$(14016)\, r_b = (151b)(4.5\ ft)$$

$$r_b = \frac{67.5\ ft \cdot lb}{14016} \quad \text{So } 1.02\ ft.$$

$$= 0.48\ ft$$



$m = 3.5\,kg$

$M = 24\,kg$

$T_y = mg + Mg = 27.5g = 269N$

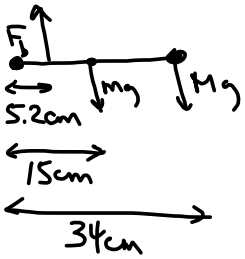
$T_x = F_{pole}$

$\tan 33° = \frac{T_y}{T_x}$

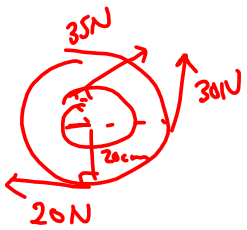
$F_{pole_x} = T_x = \frac{T_y}{\tan 33°}$

$$\Sigma\tau = 0$$

$$\Sigma\tau_{ccw} = \Sigma\tau_{cw}$$



$$F_b(5.2\text{cm}) = mg(15\text{cm}) + Mg(34\text{cm})$$



$\tau_{friction} = 0.40\,Nm$

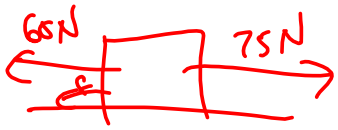
$\Sigma\tau_{cw} = (20N \cdot 0.20m) + (35N \cdot 0.10m) = 7.5\ Nm$

$\Sigma\tau_{ccw} = 30N \cdot 0.20m = 6.0\ Nm$

$\Sigma\tau = \Sigma\tau_{cw} - \Sigma\tau_{ccw} - \tau_f$

$= 7.5 - 6.0 - 0.4\,Nm$

$= 1.1\,Nm$



$KE = ke$

$\frac{p^2}{2M} = \frac{p^2}{2m}$

$KE = \frac{1}{2}mv^2$

$= \frac{1}{2}\frac{p^2}{m}$

$p = mv$