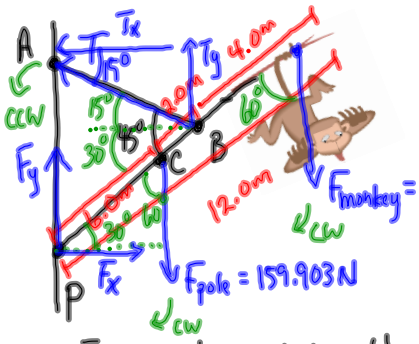
Example



$m_{monkey} = 38.8kg \Rightarrow F_{monkey} = 380.628N$

$m_{pole} = 16.3kg \Rightarrow F_{pole} = 159.903N$

a) Find the tension in the cable.

b) What are the horizontal + vertical forces at P?

Consider P to be Pivot:

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

$\tau_T = \tau_m + \tau_p$

$T(8.0m)\sin 45° = (12.0m)(380.628N)(\sin 60°) + (6.0m)(159.903N)(\sin 60°)$

$T(8.0m)\sin 45° = 3955.6N\cdot m + 830.9N\cdot m$

$T(8.0m)\sin 45° = 4786.5N\cdot m$

$T = 846N$

b) $T_x = T\cos\theta$

$T_x = 846N\cos 15°$

$T_x = 817N$

$\therefore \boxed{F_x = 817N}$ right

$T_y = T\sin\theta$

$T_y = 846\sin 15°$

$\boxed{T_y = 219N}$

Vertically:

$F_y + T_y = F_m + F_p$

$F_y + 219N = 380.628N + 159.903N$

$\boxed{F_y = 321N}$ up

To find the reaction force at P: