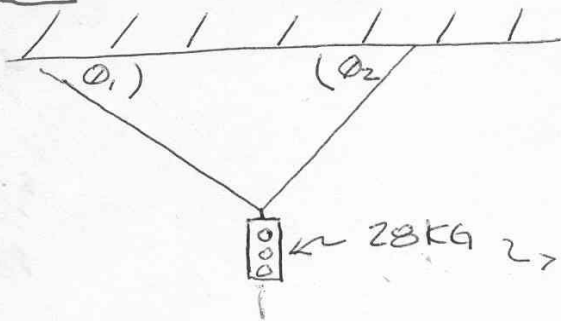


POD 18 H



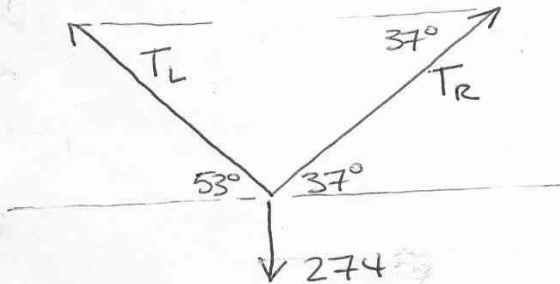
GIVEN

$$\theta_1 = 53^\circ$$

$$\theta_2 = 37^\circ$$

$$\leftarrow 28 \text{ KG} \rightarrow \text{Weight} = mg = [28 \text{ KG}][9.81 \text{ m/s}^2] = 274.68 \text{ N}$$

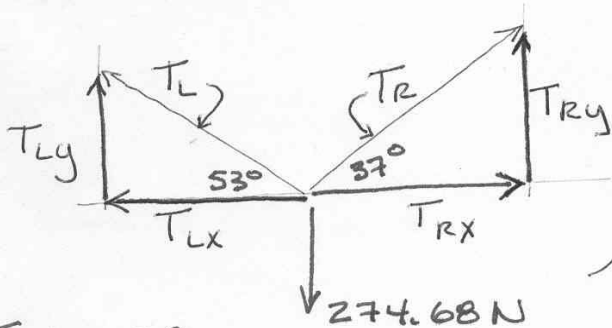
FRBD



$T_R$  = TENSION IN RIGHT CABLE (N)

$T_L$  = TENSION IN LEFT CABLE (N)

CONSTRUCT RIGHT TRIANGLES OUT OF TENSION FORCES



$T_{Ry}$  = VERTICAL COMPONENT of RIGHT CABLE TENSION

$T_{Rx}$  = HORIZONTAL COMPONENT of RIGHT CABLE TENSION

$T_{Ly}$  = VERTICAL COMPONENT of LEFT CABLE TENSION

$T_{Lx}$  = HORIZONTAL COMPONENT of LEFT CABLE TENSION

$$\sum F_x \text{'s} = 0$$

$$\therefore T_{Lx} = T_{Rx} \Rightarrow T_R (\cos 37^\circ) = T_L (\cos 53^\circ)$$

$$T_R = T_L \frac{\cos 53^\circ}{\cos 37^\circ} = T_L \frac{(0.6018)}{(0.7986)} = [0.75] T_L = T_R$$

$$\sum F_y \text{'s} = 0 \quad T_{Ly} + T_{Ry} = 274.68 \quad T_L \sin 53^\circ + T_R \sin 37^\circ = 274.68$$

$$T_L (0.7986) + T_R (0.6018) = 274.68$$

$$T_L (0.7986) + T_L (0.75)(0.6018) = 274.68$$

$$T_L (0.7986) + 0.45135(T_L) = 274.68 \text{ N}$$

$$1.25 T_L = 274.68$$

$$T_L \approx 220 \text{ N}$$

$$\therefore T_R = 165 \text{ N}$$