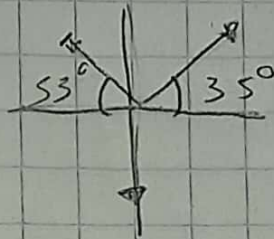


06.06.23

Yerolma Guadalupe Ullagrain Tello

Se tiene una tarima de 2 toneladas, suspendida con dos cuerdas, las cuerdas forman ángulos de 35° y 53° con la horizontal, determina la tensión que soportan ambas cuerdas



1 ton — 1000 kg
2 ton — x

$$F = m \cdot g$$

$$F = (2000)(9.81 \text{ m/s}^2)$$

$$F = 19,620$$

$$\sum F_x = 0$$

$$T_{x1} - T_{x2} = 0$$

$$T_{x1} = T_{x2}$$

$$T_1 \cos 35^\circ = T_2 \cos 53^\circ$$

$$T_1 \cdot 0.819 = T_2 \cdot 0.601$$

$$\frac{0.601}{0.819} = \boxed{0.733}$$

$$\sum F_y = 0$$

$$T_{y1} + T_{y2} = 19620 \text{ N}$$

$$T_1 \sin 35^\circ + T_2 \sin 53^\circ = 19620$$

$$T_1 \cdot 0.573 + T_2 \cdot 0.798 = 19620 \text{ N}$$

$$(0.733)(0.573) + T_2 \cdot 0.798 = 19620$$

$$T_1 \cdot 0.420 + T_2 \cdot 0.798 = 19620$$

$$T_2 \cdot 1.218 = 19620 \text{ N}$$

$$T_2 = \frac{19620}{1.218}$$

$$\boxed{11,212}$$

$$\boxed{(16,108.37)(0.733)}$$

$$\boxed{11,807.43}$$

$$T_2 = \boxed{16,108.37 \text{ N}}$$