UDS

Mi Universidad

Problemas

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Nombre del tema: :

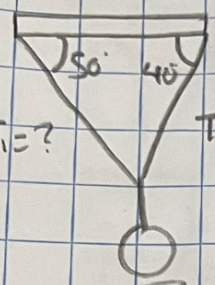
Parcial: III

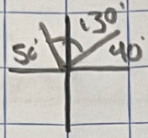
Nombre de la Materia: Física

Nombre del profesor: Ojeda

Nombre de la Licenciatura: Recursos humanos

Cuatrimestre: IV





P= 50 kg

$T_{1x} = T_1 \times \cos 130°$

$T_{1x} = +0.6\ T_{1x}$

$T_{1y} = T_{1y} \operatorname{SEN} 130°$

$T_{1y} = 0.7\ T_{1y}$

$T_{2x} = T_2 \times \cos 40°$

$T_{2x} = 0.7\ T_{2x}$

$T_{2y} = T_{2y} \operatorname{SEN} 40°$

$T_{2y} = 0.6\ T_{2y}$

$\Sigma T_x = 0$

$T_{1x} + T_{2x} = 0$

$-0.6 t_1 + 0.7 t_2 = 0$

$\Sigma T_y = 0$

$T_{1y} + T_{2y} = 50\ kg$

$0.7 t_1 + 0.6 = 50\ kg$

$-0.6 t_1 + 0.7 t_2 = 0 \quad (0.7)$

$0.7 t_1 + 0.6 t_2 = 50\ kg \quad (0.6)$

$-0.42 t_1 + 0.49 t_2 = 0$

$0.42 t_1 + 0.36 t_2 = 30\ kg$

$0.85 t_2 = 30\ kg$

$T_2 = \dfrac{30\ kg}{0.85}$

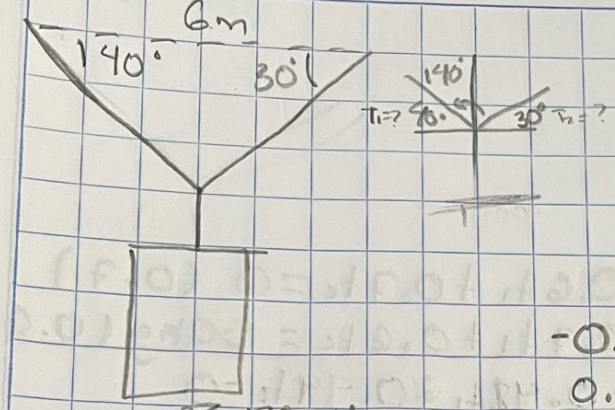
$\boxed{T_2 = 35.2}$

$0.7 t_1 + 0.6 (35.2) t_2 = 50\ kg$

$0.7 t_1 + 21.12 t_2 = 50\ kg$

$t_1 = \dfrac{50\ kg - 21.12}{0.7}$

$\boxed{T_1 = 41.2}$



$T_{1x} = T_1 \cos 140°$

$T_{1x} = -0.7\,T_{1x}$ /

$T_{1y} = T_{1y} \operatorname{SEN} 140°$

$T_{1y} = 0.6\,T_{1y}$ /

$T_{2x} = T_{2x} \cos 30°$

$T_{2x} = 0.8\,T_{2x}$ /

$T_{2y} = T_{2y} \operatorname{SEN} 30°$

$T_{2y} = 0.5\,T_{2y}$ /

$\Sigma T_x = 0$

$T_{1x} + T_{2x} = 0$

$-0.7T_1 + 0.8T_2 = 0$

$\Sigma T_y = 0$

$T_{1y} + T_{2y} = 1200\ N$

$0.6T_1 + 0.5T_2 = 1200\ N$

$-0.7t_1 + 0.8t_2 = 0$ (0.6)

$0.6t_1 + 0.5t_2 = 1200\ N$ (0.7)

$-0.42t_1 + 0.48t_2 = 0$

$0.42t_1 + 0.35t_2 = 840\ N$

$T_2 = 0.83 = 840\ N$

$T_2 = \frac{840}{0.83}$

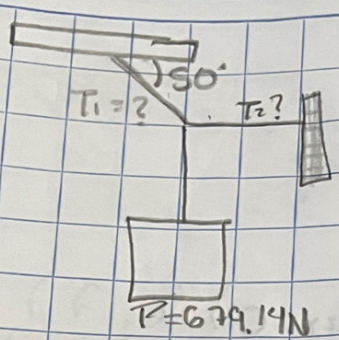
$T_2 = 1,012$

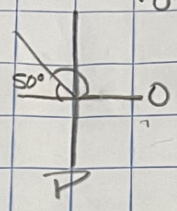
$-0.7t_1 + 0.8(1012)_2 = 0$

$-0.7T_1 + 809.6 = 0$

$T_1 = \frac{-809.6\ N}{-0.7}$

$T_1 = 1156.5\ N$





$180 - 50 = 130°$

$T_{1x} = T_1 \times \cos 130°$

$T_{1x} = -0.6\ T_{1x}$

$T_{1y} = T_{1y} \operatorname{SEN} 130°$

$T_{1y} = 0.7\ T_{1y}$

$T_{2x} = T_2 \times \cos 0°$

$T_{2x} = 1\ T_{2x}$

$T_{2y} = T_{2y} \operatorname{SEN} 0°$

$T_{2y} = 0\ T_{2y}$

$\Sigma T_x = 0$

$T_{1x} + T_{2x} = 0$

$-0.6\ T_1 + 1\ T_2 = 0$

$\Sigma T_y = 0$

$T_{1y} + T_{2y} = 679.14N$

$0.7\ T_1 = 679.14$

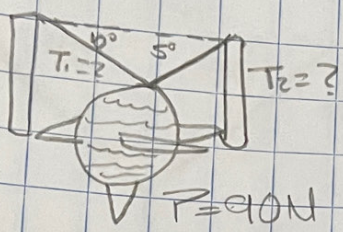
$T_1 = \frac{679.14}{0.7}$

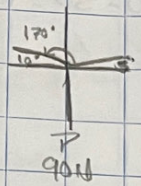
$T_1 = 970.2$

$-0.6\ (970.2)\ T_1 + 1\ T_2 = 0$

$-582.12 + 1\ T_2 = 0$

$T_2 = \frac{0 - 582.12}{1}$





$T_{1x} = T_1 \cos 170°$

$T_{1x} = -0.9\, T_1$ /

$T_{1y} = T_2 \sin 170°$

$T_{1y} = 0.17\, T_1$ /

$T_{2x} = T_2 \cos 5°$

$T_{2x} = 0.9\, T_2$ /

$T_{2y} = T_{2y} \sin 5°$

$T_{2y} = 0.08\, T_{2y}$ /

$\Sigma T_x = 0$

$T_{1x} + T_{2x} = 0$

$-0.9T_1 + 0.9T_2 = 0$

$\Sigma T_y = 0$

$T_{1y} + T_{2y} = 90$

$0.17T_1 + 0.08T_2 = 90\ N$

$(-0.9T_{1x} + 0.9T_{2x} = 0)(0.17)$

$(0.17T_{1y} + 0.08T_{2y} = 90N)(0.9)$

$-0.15T_1 + 0.15T_2 = 0$

$0.15T_2 + 0.072T_2 = 81$

$0.87T_2 = 81$

$T_2 = \frac{81}{0.87}$

$T_2 = 93.1$

$0.17T_1 + 0.08(93.17) = 90N$

$0.17T_1 + 7.45 = 90$

$T_1 = \frac{90 - 7.45}{0.17}$

$T_1 = 485.5\ N$