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física

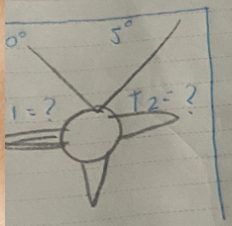
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WDS

problemas



$$T_1 = 10 - 180 = 170^\circ$$

$$T_2 = 5^\circ = 0 = 5$$

$$T_{1x} = T_1 \cos 170^\circ = -0.98$$

$$T_{1y} = T_1 \sin 170^\circ = 0.17$$

$$T_{2x} = T_2 \cos 5^\circ = 0.99$$

$$T_{2y} = T_2 \sin 5^\circ = 0.08$$

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

$$-0.98 + 0.99 = 0$$

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

$$0.17 + 0.08 = 90 \text{ N}$$

$$\begin{pmatrix} -0.98 T_1 + 0.99 T_2 = 0 \\ 0.17 T_1 + 0.08 T_2 = 90 \text{ N} \end{pmatrix} \begin{pmatrix} 0.17 \\ 0.99 \end{pmatrix}$$

$$-0.16 + 0.16 = 0$$

$$+0.16 + 0.07 = 88.2 \text{ N}$$

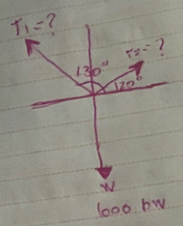
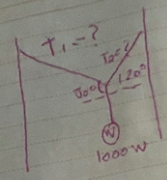
$$T_2 = \frac{88.2 \text{ N}}{0.23} = 383.47 = T_2$$

$$-0.98 T_1 + 0.99 (383.47) = 0$$

$$-0.98 T_1 + 379.6 = 0$$

$$T_1 = \frac{379.6}{-0.98}$$

$$T_1 = 387.3 \text{ N}$$



$$\sum T_x = 0$$

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

$$-0.6 T_1 + 0.9 T_2 = 0$$

$$\sum T_y = 0$$

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

$$0.7 T_1 + 0.3 T_2 = 1000 \text{ N}$$

$$\begin{pmatrix} -0.6 T_1 + 0.9 T_2 = 0 \\ 0.7 T_1 + 0.3 T_2 = 1000 \text{ N} \end{pmatrix} \begin{pmatrix} 0.7 \\ 0.6 \end{pmatrix}$$

aplicando eliminación

$$-0.42 T_1 + 0.63 T_2 = 0$$

$$0.72 T_1 + 0.18 T_2 = 600 \text{ N}$$

$$0.812 = 600 \text{ N}$$

$$T_2 = \frac{600 \text{ N}}{0.81}$$

$$T_2 = 740.7 \text{ N}$$

$$T_1 = 1111 \text{ N}$$

substituyendo (2) en ecu 1

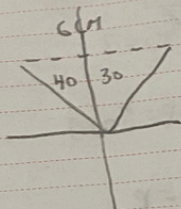
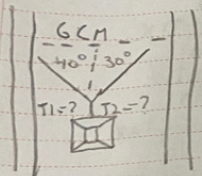
$$-0.6 T_1 + 0.9 (740.7 \text{ N}) = 0$$

$$-0.6 T_1 + 666.6 \text{ N} = 0$$

$$T_1 = \frac{666.6 \text{ N}}{-0.6}$$



### Ejercicio 3



$$R = 1200$$

$$1 - T_1x \cos 40$$

$$T_1x = -0.76$$

$$T_1y \text{ Sen } 40$$

$$T_1y = 0.64$$

$$T_2x \cos 30$$

$$T_2x = 0.86$$

$$T_2y \text{ Sen } 30$$

$$T_2y = 0.5$$

$$2 - T_1x + T_2x = 0$$

$$-0.76T_1 + 0.86T_2 = 0$$

$$T_1y + T_2y = N$$

$$0.64T_1 + 0.5T_2 = 1200N$$

$$-0.76T_1 + 0.86T_2 = 0 \quad (0.64)$$

$$0.64T_1 + 0.5T_2 = 1200N \quad (0.76)$$

$$0.4T_1 + 0.55T_2 = 0$$

$$0.4T_1 + 0.38T_2 = 912$$

$$0.93 = 912$$

$$T_2 = \frac{912}{0.93}$$

$$T_2 = 980.6T_2$$

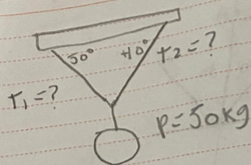
$$-0.76 + 0.86(980.6) = 0$$

$$-0.76 + 843.3 = 0$$

$$T_1 = \frac{843.35}{-0.76} = -1.109.6T_1$$



### Ejercicio 4



$$T_1 \cos 130^\circ$$

$$T_1x = 0.64 T_1x$$

$$T_1 \text{ Sen } 130$$

$$T_1y = 0.26 T_1y$$

$$T_2 \cos 40$$

$$T_2x = 0.26 T_2x$$

$$T_2 \text{ Sen } 40$$

$$T_2y = 0.64 T_2y$$

$$T_1y + T_2y = P$$

$$0.26 + 0.64 = P 50 \text{ Kg}$$

$$-0.64T_1 + 0.26T_2 = 0 \quad (0.76)$$

$$0.26T_1 + 0.64T_2 = 50 \quad (0.64)$$

$$-0.48T_1 + 0.52 = 0$$

$$-0.48T_1 + 0.40 = -32$$

$$0.12 = -32$$

$$T_2 = \frac{32}{0.12}$$

$$T_2 = 188.2$$

$$-0.64 + 0.76(188.2) = 0$$

$$-0.64 + 143.0 = 0$$

$$T_1 = \frac{143.0}{0.64}$$

$$T_1 = 223.4$$

