



Mi Universidad

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Nombre del tema: Fisica

Parcial 3

Nombre de la licenciatura: Recursos Humanos

Nombre la materia: Fisica 1

Unidad 3

Problema No. 1

$T_1 = 10 - 180 = 170^\circ$
 $T_2 = 5 - 0 = 5^\circ$

$T_{1x} = T_1 \cos 170^\circ = -0.98$
 $T_{1y} = T_1 \sin 170^\circ = 0.17$
 $T_{2x} = T_2 \cos 5^\circ = 0.99$
 $T_{2y} = T_2 \sin 5^\circ = 0.08$

$T_{1x} + T_{2x} = 0$
 $-0.98 + 0.99 = 0$
 $T_{1y} + T_{2y} = N$
 $0.17 + 0.08 = 90N$

$(-0.98T_1 + 0.99T_2 = 0) (0.17)$
 $(0.17T_1 + 0.08T_2 = 90N) (-0.98)$
 $-0.16 + 0.16 = 0$
 $+0.16 + 0.07 = 88.2N$
 $0.23 = 88.2N$
 $T_2 = 88.2N = 383.47 = T_2$

$-0.98T_1 + 0.99(383.47) = 0$
 $-0.98T_1 + 379.6 = 0$
 $T_1 = \frac{379.6}{0.98}$
 $T_1 = 387.3N$

Resultado:
 $T_1 = 387.3N$
 $T_2 = 383.47N$

Problema No. 2

$T_1 = 50 - 180 = 130^\circ$
 $T_2 = 0^\circ$

$T_{1x} = T_1 \cos 130^\circ = -0.64$
 $T_{1y} = T_1 \sin 130^\circ = 0.76$
 $T_{2x} = T_2 \cos 0 = 1$
 $T_{2y} = T_2 \sin 0 = 0$

$T_{1x} + T_{2x} = 0$
 $-0.64 + 1 = 0$
 $T_{1y} + T_{2y} = N$
 $0.76 + 0 = 679.14N$
 $679.14 = 893.60 = T_1$
 $T_2 = 571.9N$

$0.64 + T_2 = 0$
 $0.64(893.60) + T_2 = 0$
 $T_2 = 571.9N$

Problema 3

$T_1 = 40 - 180 = 140^\circ$
 $T_2 = 30^\circ$

$x T_1 = \cos 140^\circ = -0.76$
 $y T_1 = \sin 140^\circ = 0.64$
 $x T_2 = \cos 30^\circ = 0.86$
 $y T_2 = \sin 30^\circ = 0.5$

$T_{1x} + T_{2x} = 0$
 $-0.76 + 0.86 = 0$
 $T_{1y} + T_{2y} = N$
 $0.64 + 0.5 = 1200N$

$(T_{1x} + T_{2x} = 0) (T_{1y})$
 $(T_{1y} + T_{2y} = N) (T_{1x})$
 $(-0.76 + 0.86 = 0) (0.64)$
 $(0.64 + 0.5 = 1200N) (-0.76)$
 $-0.48 + 0.55 = 0$
 $+0.48 + 0.38 = 912$
 $0.93 = 912N$

$T_2 = \frac{N}{0.93} = \frac{912N}{0.93} = 980.64 = T_2$

$T_{1x} + T_{2x} (T_2) = 0$
 $-0.76 + 0.86(980.64) = 0$
 $-0.76 + 843.35 = 0$

$T_1 = \frac{T_2}{-0.76} = \frac{843.35}{-0.76} = 1,109.67$

Problema 4

$T_1 = 50 - 180 = 130^\circ$
 $T_2 = 40^\circ$

$T_{1x} = -0.64$
 $T_{1y} = 0.76$
 $T_{2x} = 0.76$
 $T_{2y} = 0.64$

$T_{1x} + T_{2x} = 0$
 $-0.64 + 0.76 = 0$
 $T_{1y} + T_{2y} = P$
 $0.76 + 0.64 = 50$

$T_1 = 13.54$
 $T_2 = 11.42$

$(-0.64 + 0.76T_2) (0.76)$
 $(0.76 + 0.64T_2 = 50) (0.64)$
 1.52
 $+1.28 = 32P$
 $2.80 = 32P$
 $32P = 11.42 = T_2$
 2.80

$T_1 = (-0.64 + 0.76T_2) (11.42)$
 $-0.64 + 8.67$
 $8.03 = 13.54 = T_1$
 0.64