UDS

Mi Universidad

operaciones

Nombre del Alumno: Joaquin Betony Zapete Morales.

Nombre del tema: fuerzas coplanares

Parcial: Unida 1

Nombre de la Materia: resistencia de materiales de construcción.

Nombre del profesor: ARQ. Pedro Alberto García López.

Nombre de la Licenciatura: Arquitectura.

Cuatrimestre: Numero 4

Joaquin Betony Zapeta Morales.

F_1

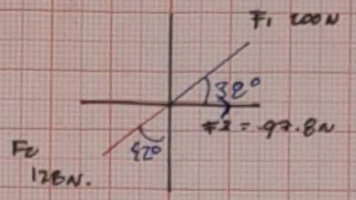
Sen 32° (200 N) 105.988 N

Cos 32° (200 N) 169.609 N.

F_2

Sen 48° (128 N) −95.122 N

Cos 48° (128 N) −85.648 N



$\Sigma F_x =$

169.609 N − 85.648 N + 97.8 N = 181.761 N.

ΣF_y

105.983 N − 95.122 N = 10.861 N.

$h = \sqrt{(181.761\,N)^2 + (10.861\,N)^2}$

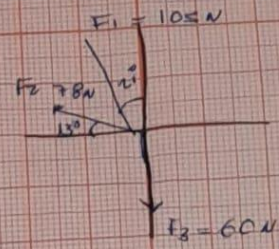
$h = 182.085\ N$

$\tan\theta = \frac{CO}{CA}$

$\tan = \frac{10.861\ N}{181.761\ N}$ $\quad \tan^{-1} = 3.419$

$90 - 3.414 = 86.581.$

Plataforma.



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F_1

$\sin\theta \frac{F_{1y}}{69°} = \sin 69° (105 N)$

$= 98.028 N$

$\cos\theta \frac{F_{1x}}{69°} = \cos 69° (105 N)$

$= -37.628 N$

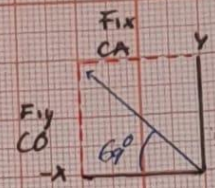
F_2

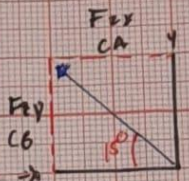
$\cos\theta \frac{F_{2x}}{15°} = \cos 15° (78 N)$

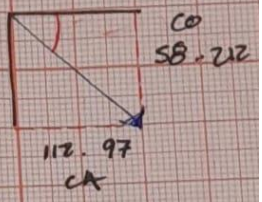
$= -75.342 N$

$\sin\theta = \frac{F_{2y}}{15°} = \sin 15° (78 N)$

$= 20.187 N$







$\Sigma F_x = 0$

$-37.628 N - 75.342 N = 112.97 N$

$\Sigma F_y = 0$

$98.028 N + 20.187 - 60 N = 58.212 N$

$h \sqrt{(112.97 N)^2 + (58.212 N)^2}$

$h = 127.086.$

$\tan\theta = \frac{CO}{CA}$ $\tan\theta \frac{58.912}{-112.97 N} = -0.515$

$\tan^{-1}(-0.515) = -27.248$

$180° - 27.261 = 152.784.$