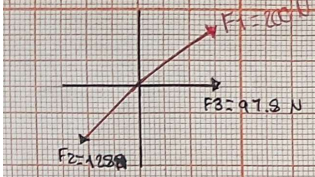
Iber Emanuel Vázquez Arguello

Arq. Pedro Alberto García

Fuerzas coplanares

Resistecia de materiales de construcción

Comitán de Domínguez Chiapas a 24 de sep. de 23



$\text{Sen } 32° = \frac{F_{1Y}}{200} = \text{Sen } 32°(200)$

$F_{1Y} = 105.983 \text{ N}$

$\text{Cos } 32° = \frac{F_{1X}}{200} = \text{Sen } 32°(200)$

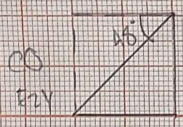
$F_{1X} = 169.609 \text{ N}$

$\text{Sen } 45° = \frac{F_{2Y}}{125} = \text{Sen } 45°(125)$

$F_{2Y} = -95.122$

$\text{Cos } 45° = \frac{F_{2X}}{125} = \text{Cos } 45°(125)$

$F_{2X} = -55.685$



$F_3 = F_{3X} = 97.3 \text{ N}$

$\Sigma F_X = 169.609 \text{ N} - 55.685 - 97.3 \text{ N} = 131.761 \text{ N}$

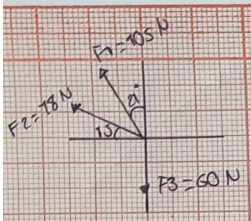
$\Sigma F_Y = 105.983 - 95.122 = 10.861 \text{ N}$

$R = \sqrt{(131.761)^2 + (10.861)^2}$

$R = 132.185$

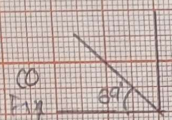
$\text{Tan} = \frac{CO}{CA} = \frac{10.861}{131.761} = \text{Tan}^{-1}\left(\frac{10.861}{131.761}\right) = 3.719$

$90 - 3.719 = 86.281°$



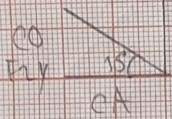
$\operatorname{Sen}69° = \frac{F_{1y}}{105} \quad \operatorname{Sen}69°(105) = F_{1y} \quad F_{1y} = 98.025\,N$

$\operatorname{Cos}69° = \frac{F_{1x}}{105} \quad \operatorname{Cos}69°(105) = F_{1x} \quad F_{1x} = -37.685\,N$



$\operatorname{Sen}15° = \frac{F_{2y}}{78} \quad \operatorname{Sen}15°(78) = F_{2y} \quad F_{2y} = 20.187\,N$

$\operatorname{Cos}15° = \frac{F_{2x}}{78} \quad \operatorname{Cos}15°(78) = F_{2x} \quad F_{2x} = -75.312$



$F_3 = F_{3y} = 60\,N$

$\Sigma F_x = -37.685\,N - 75.312 = -112.997\,N$

$\Sigma F_y = 98.025\,N + 20.187\,N - 60\,N = 58.212\,N$

$h = \sqrt{(-112.997)^2 + (58.212)^2}$

$h = 127.085$

$\tan = \frac{58.212}{-112.997} \quad \tan^{-1} = -27.181$

$180 - 27.181 = 152.739$