problemas

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Nombre del tema: FUERZAS COPLANARES

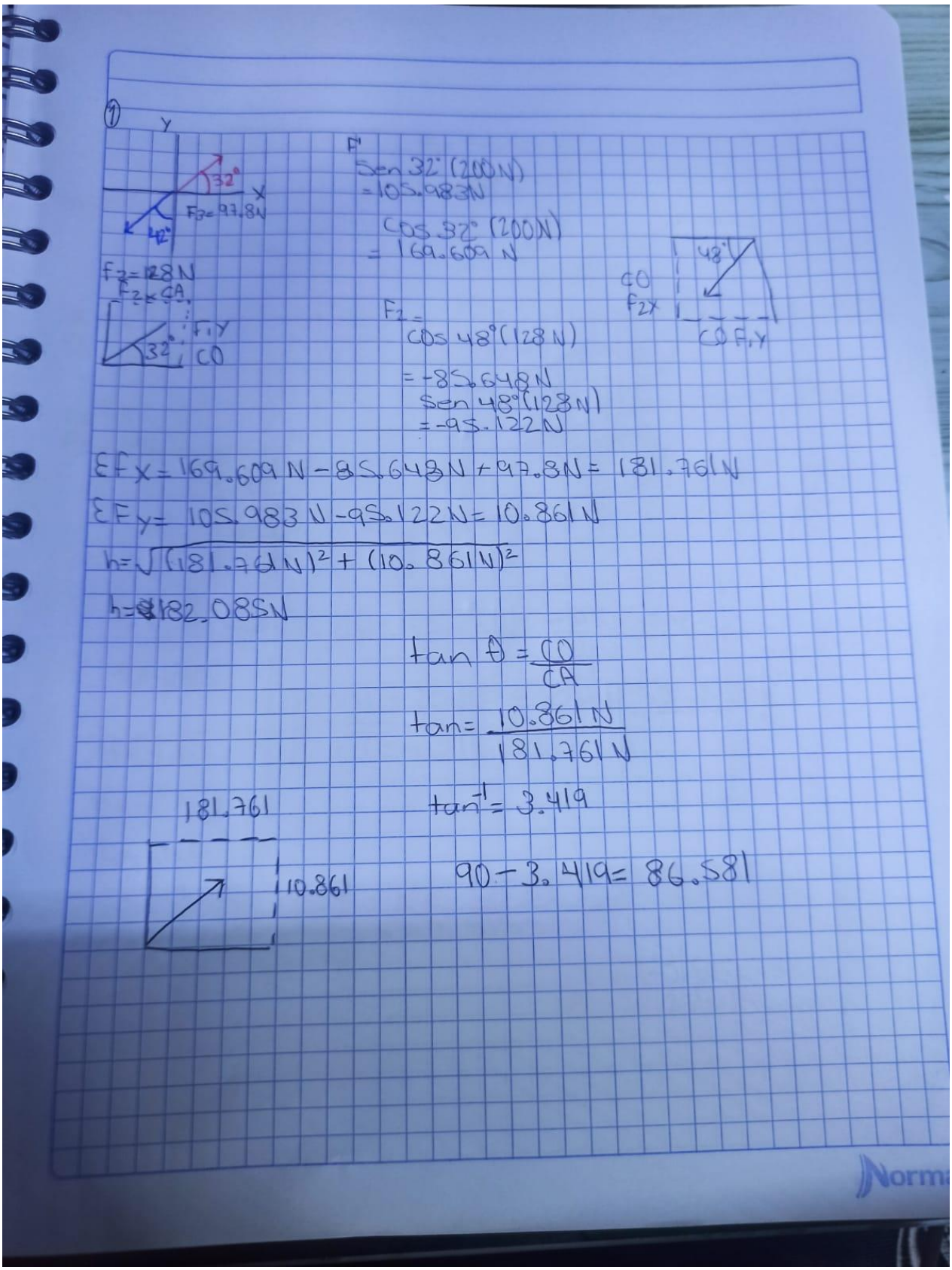
Parcial: 1

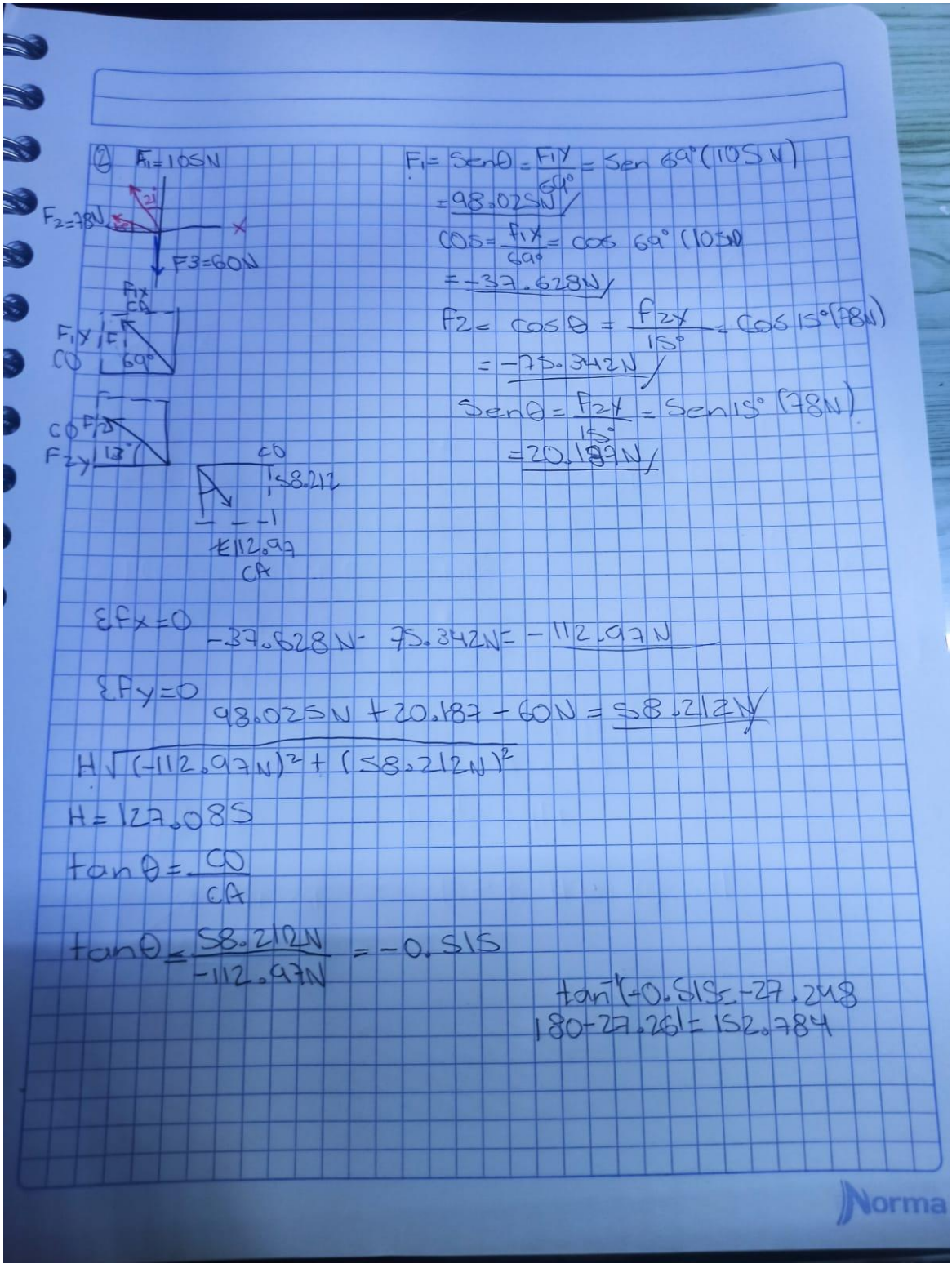
Nombre de la Materia: resistencia de materiales

Nombre del profesor: Arq. pedro

Nombre de la Licenciatura: Arquitectura

Cuatrimestre: 4


1
Y
32°
X
F3=97.8N
42°
F3=128N
F2x
CA
32°
F1Y
CO
F'
Sen 32° (200N)
=105.983N
Cos 32° (200N)
=169.609 N
F2=
Cos 48°(128N)
=-85.648N
Sen 48°(128N)
=-95.122N
48°
CO
F2x
CO F1Y
ΣFx=169.609N-85.648N+97.8N=181.761N
ΣFy=105.983N-95.122N=10.861N
h=√(181.761N)²+(10.861N)²
h=182.085N
tan θ = CO/CA
tan= 10.861N / 181.761N
tan⁻¹= 3.419
181.761
10.861
90-3.419=86.581



$F_1 = \text{Sen}\theta = \frac{F_{1Y}}{69°} = \text{Sen } 69°(105\,N)$

$= 98.025N$

$\cos = \frac{F_{1X}}{69°} = \cos 69°(105N$

$= -37.628N$

$F_2 = \cos\theta = \frac{F_{2X}}{15°} = \cos 15°(78N)$

$= -75.342N$

$\text{Sen}\theta = \frac{F_{2Y}}{15°} = \text{Sen}15°(78N)$

$= 20.187N$

$\Sigma F_X = 0$

$-37.628N - 75.342N = -112.97N$

$\Sigma F_Y = 0$

$98.025N + 20.187 - 60N = 58.212N$

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

$H = 127.085$

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

$\tan\theta = \frac{58.212N}{-112.97N} = -0.515$

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

$180 - 27.261 = 152.784$