Mecânica 1

Pedro Henrique Macena Monteiro Moraes

June 7, 2019

Abstract

1 Capítulo 1 e 2

1/1
$v = -36\hat{\imath}+13\hat{\jmath}$; $\theta x = ?$, $\theta y = ?$; $n = ?$

$v = \sqrt{v * x^2 + v * y^2} => \sqrt{36^2 + 15^2} = 39$

$\cos\theta x = \frac{V*x}{V} => \frac{-36}{39}$ portanto: $\theta x = 157,38$

$\cos\theta y = \frac{Vg}{V} = \frac{15}{39}$ portanto: $\theta y = 67,4$

$n = \frac{\overline{V}}{V} = \frac{-36i+15j}{39} = -0,923i + 0,385\hat{\jmath}$

1/2

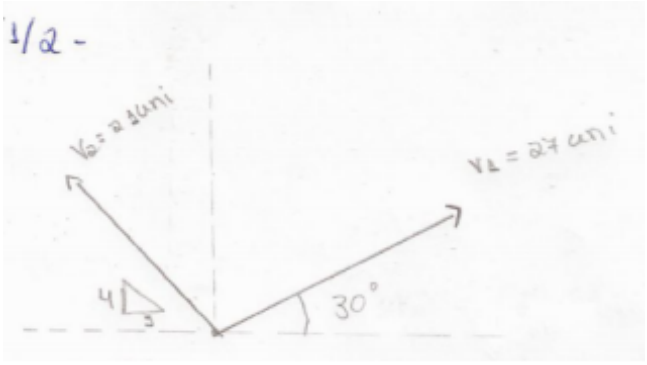

Figure 1:

$\sin B = \frac{\sin 83,1}{32,2}$ portanto: $B = 40,4$

$Ox = B + 30 => 40,4 + 30$
$= 70,7$

Solução Algébrica

$V^2 = 27^2 + 21^2 - 2 * (27) * (21) * \cos 83,1$
$V = 32,3$

Solução Gráfica

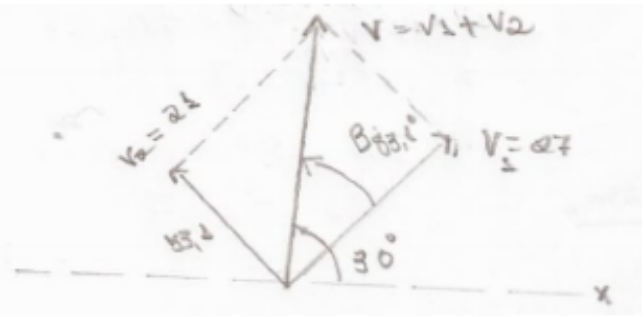

Figure 2:

2/3
$F = 4,8KN$
$\overline{F} =$ î e $\hat{\text{j}}$
$F = 4,8 * (-\frac{3}{5} * i - \frac{-4}{5j})$

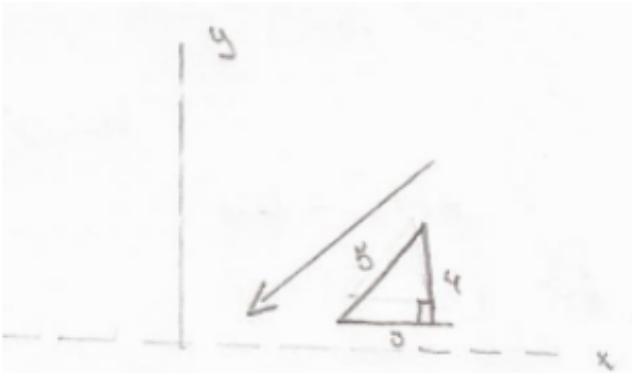

Figure 3:

$F = (-2,88i - 3,84j)KN$