Putri Lestari

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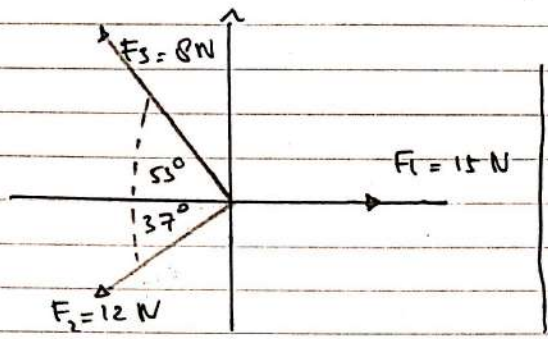
Date 07 Maret 2024

Carilah Resultan dari vektor berikut

① 


Dik: $F_1 = 15\,N$
$F_2 = 12\,N$
$F_3 = 8\,N$

Dit = R. ?

Jawab :

- $\Sigma F_{xy} = F_3 \sin 53° - F_2 \sin 37°$
  $= 8 \times \frac{4}{5} - 12 \times \frac{3}{5}$
  $= 6.4 - 7.2 = \underline{-0.8\,N}$

- $\Sigma F_x = F_1 - F_2 \cos 37° - F_3 \cos 53°$
  $= 15 - 12 \times \frac{4}{5} - 8 \times \frac{3}{5}$
  $= 15 - 9.6 - 4.8 = \underline{0.6\,N}$

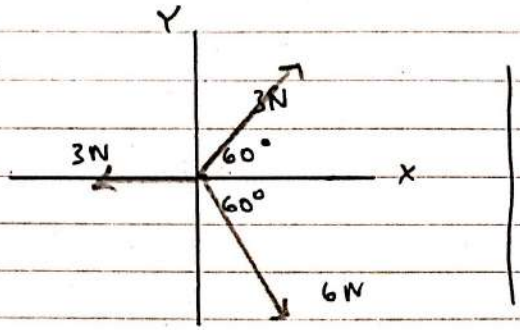
- $R^2 = \Sigma F_x^2 + \Sigma F_y^2$
  $= (0.6)^2 + (0.8)^2$
  $= 0.36 + 0.64 = 1$

$R = \sqrt{1}$
$= \underline{1\,N}$

maka resultan dari vektor tersebut ialah 1N

No
Date

(2)




Dik = $F_1 = 3\ N$
$F_2 = 6N$
$F_3 = 3N$

Dit = R ?

Jawab.

- $\Sigma F_x = 3 \cos 60 + 6 \cos 60 - 3$
  $= 3 \cdot \frac{1}{2} + 6 \cdot \frac{1}{2} - 3$
  $= 1 + 3 - 3$
  $= 1\ N$

- $\Sigma F_y = 3 \sin 60° - 6 \sin 60°$
  $= 3 \cdot \frac{1}{2}\sqrt{3} - 6 \cdot \frac{1}{2}\sqrt{3}$
  $= 1\sqrt{3} - 3\sqrt{3}$
  $= -2\sqrt{3}\ N$

- $R = \sqrt{(\Sigma F_x)^2 + (\Sigma F_y)^2}$
  $= \sqrt{1^2 + (-2\sqrt{3})^2}$
  $= 1 + 4\sqrt{9}$
  $1 = 4 \cdot 3$
  $= 12 + 1$
  $= 13\ N$