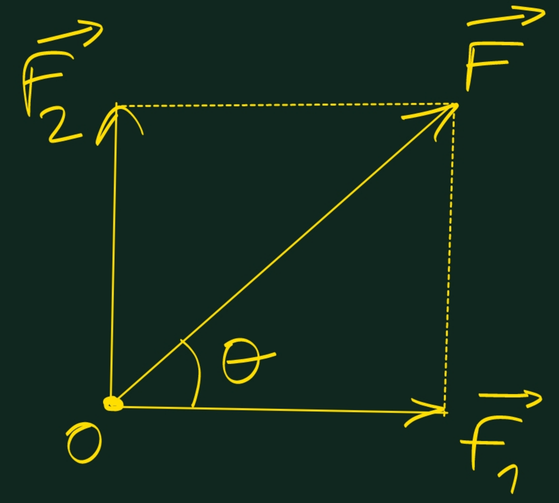
Ασκ. 1 σελ. 157



$F_1 = F_2$

$\varepsilon\varphi\theta = \frac{F_2}{F_1} = 1 \Rightarrow$

$\theta = 45^\circ$

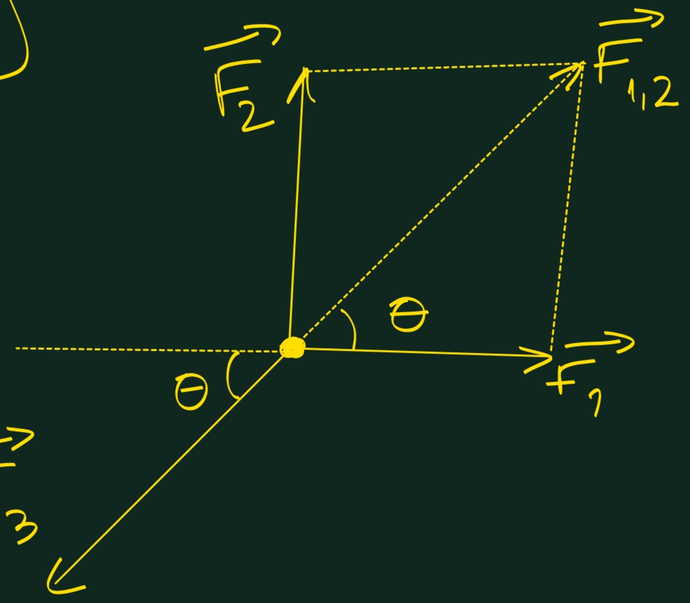
$F^2 = F_1^2 + F_2^2 \Rightarrow$

$10^2 = F_1^2 + F_1^2 \Rightarrow$

$100 = 2F_1^2 \Rightarrow F_1^2 = 50 \Rightarrow F_1 = \sqrt{50} = 5\sqrt{2}\ N$

$\sqrt{50} = \sqrt{25 \cdot 2} = \sqrt{25} \cdot \sqrt{2} = 5\sqrt{2}$

Ασκ. 2



$F_{1,2}^2 = F_1^2 + F_2^2 \Rightarrow$

$F_{1,2}^2 = 4^2 + 5^2 \Rightarrow$

$F_{1,2}^2 = 41 \Rightarrow$

$F_{1,2} = \sqrt{41}\ N$

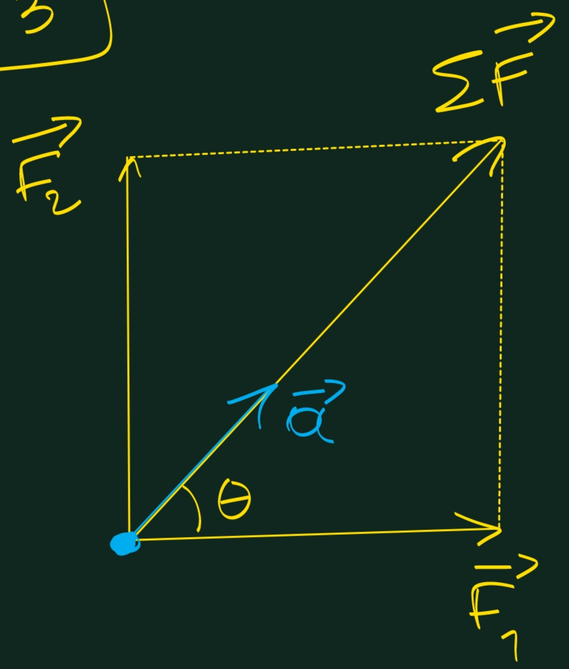
Άρα η $\vec{F_3}$ έχει μέτρο $\sqrt{41}\ N$, δηλαδή:

$F_3 = \sqrt{41}\ N$ και κατεύθυνση αντίθετη

της $\vec{F_{1,2}}$.

$\varepsilon\varphi\theta = \frac{F_2}{F_1} = \frac{5}{4}$

Ασκ. 3



$$\Sigma F^2 = F_1^2 + F_2^2 \Rightarrow$$

$$\Sigma F^2 = 6^2 + 8^2 \Rightarrow$$

$$\Sigma F^2 = 36 + 64 \Rightarrow$$

$$\Sigma F^2 = 100 \Rightarrow$$

$$\Sigma F = 10\,N$$

$$\Sigma F = m\alpha \Rightarrow 10 = 1 \cdot \alpha \Rightarrow \alpha = 10\,m/s^2$$

Κατεύθυνση: $\varepsilon\varphi\theta = \frac{F_2}{F_1} = \frac{8}{6} = \frac{4}{3}$