

Corrigé

1. On a $\vec{F} = \vec{F}_1 + \vec{F}_2$.

2. On a :

$$\begin{aligned}\|\vec{F}\|^2 &= \|\vec{F}_1 + \vec{F}_2\|^2 = \|\vec{F}_1\|^2 + 2\vec{F}_1 \cdot \vec{F}_2 + \|\vec{F}_2\|^2 \\ &= 15^2 + 2 \times F_1 \times F_2 \times \cos(\vec{F}_1, \vec{F}_2) + 13^2 \\ &= 225 + 2 \times 15 \times 13 \times \cos(40) + 169 \\ &= 394 + 390 \times \cos(40) \approx 692,8\end{aligned}$$

donc $\|\vec{F}\| \approx 26,3$ N.