

4 In this question, the x and y directions are horizontal and vertically upwards respectively.

A particle of mass 1.5 kg is in equilibrium under the action of its weight and forces $\mathbf{F}_1 = \begin{pmatrix} 4 \\ -2 \end{pmatrix}\text{N}$ and \mathbf{F}_2 .

(a) Find the force \mathbf{F}_2 . **[3]**

The force \mathbf{F}_2 is changed to $\begin{pmatrix} 2 \\ 20 \end{pmatrix}\text{N}$.

(b) Find the acceleration of the particle. **[2]**