

3 A particle is in equilibrium under the action of three forces in newtons given by

$$\mathbf{F}_1 = \begin{pmatrix} 8 \\ 0 \end{pmatrix}, \quad \mathbf{F}_2 = \begin{pmatrix} 2a \\ -3a \end{pmatrix} \quad \text{and} \quad \mathbf{F}_3 = \begin{pmatrix} 0 \\ b \end{pmatrix}.$$

Find the values of the constants a and b .

[3]