

Solutionbank M1

Heinemann Modular Maths for Edexcel AS and A-level

4 Forces

Exercise E, Question 5

Question:

The set of forces $(ai + 2j) \text{ N}$, $(6i - 3j) \text{ N}$, $(4i + bj) \text{ N}$, and $(i + j) \text{ N}$ is in equilibrium. Find a and b .

Solution:

$$\begin{aligned}(ai + 2j) + (6i - 3j) + (4i + bj) + (i + j) &= 0 \\ \text{i.e. } (a + 11)i + (b)j &= 0\end{aligned}$$

$$\text{i.e. } a = -11, \quad b = 0$$

© Harcourt Education Ltd 2005