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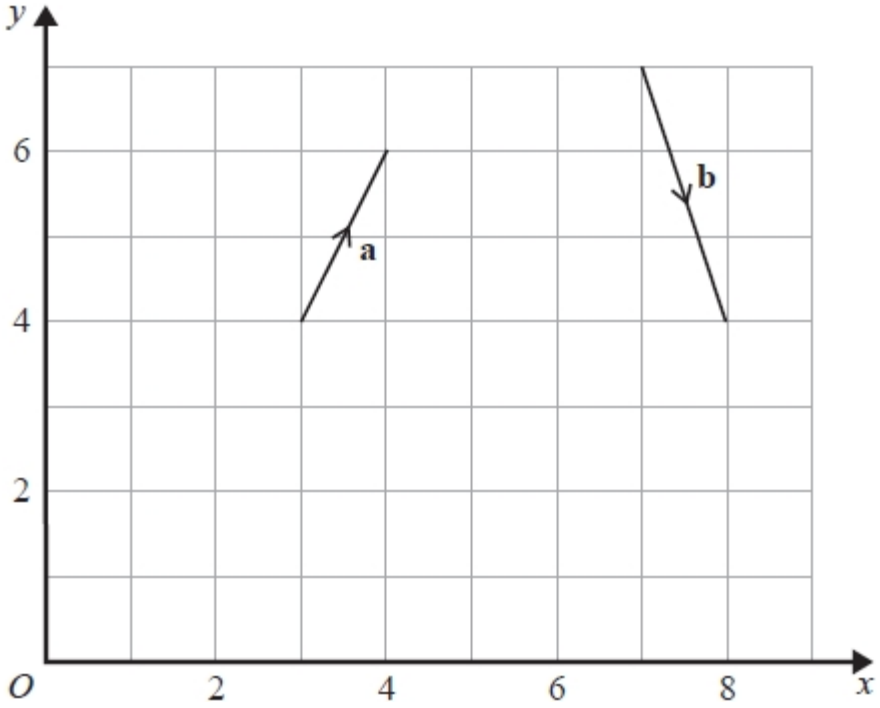
# Adding vectors

**A LEVEL LINKS**
**Scheme of work:** 5a. Definitions, magnitude/direction, addition and scalar multiplication

## Practice questions

**1** The vector **a** and the vector **b** are shown on the grid.




(a) On the grid, draw and label vector $-2\mathbf{a}$

(b) Work out $\mathbf{a} + 2\mathbf{b}$ as a column vector.

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$

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**2**

$\mathbf{a} = \begin{pmatrix} 1 \\ 4 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}$

(a) Write down as a column vector

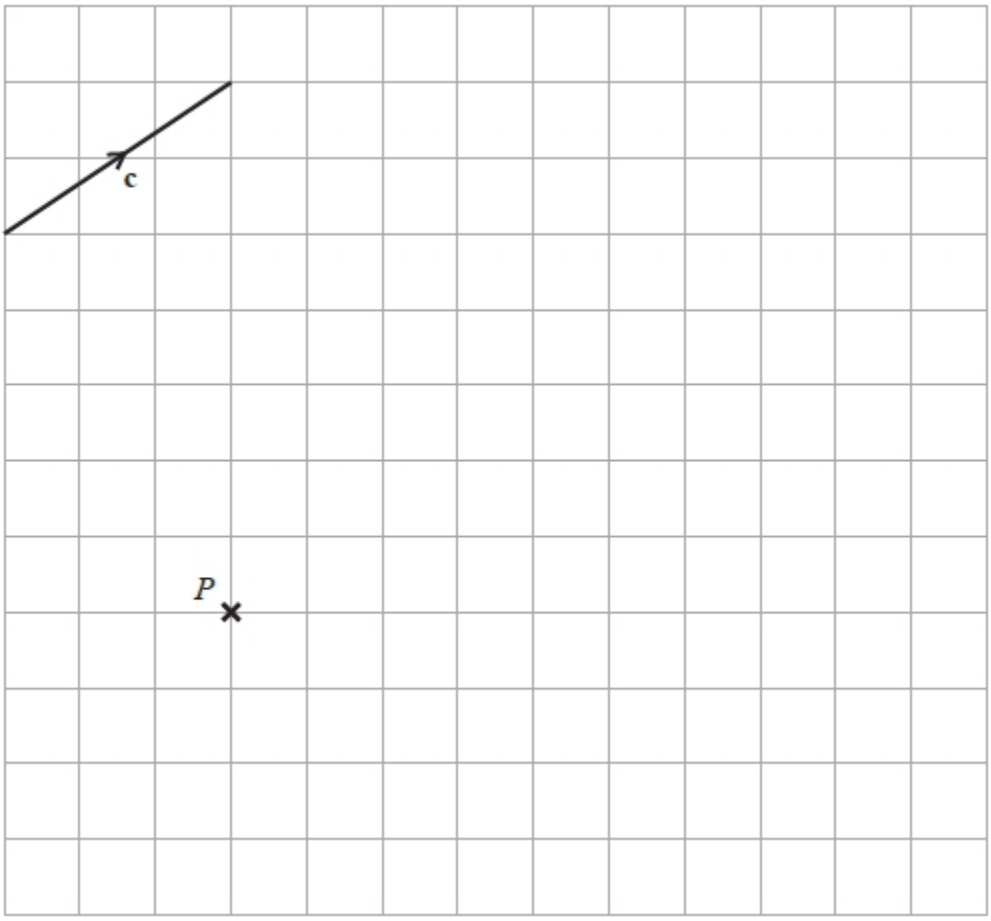
(i) $\mathbf{a} + \mathbf{b}$

.....

(ii) $2\mathbf{a} + 3\mathbf{b}$

.....

The vector **c** is drawn on the grid.




(b) From the point *P*, draw the vector 3**c**

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# Answers

**1** (a) Diagram

(b) $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$

**2** (a) (i) $\begin{pmatrix} 4 \\ 6 \end{pmatrix}$

(ii) $\begin{pmatrix} 11 \\ 14 \end{pmatrix}$

(b) Correct vector drawn