

E7.1 Vectors

Question Paper

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Level	Core
Topic	E7. Matrices & Transformations
Sub-Topic	E7.1 Vectors
Booklet	Question Paper

Time Allowed: 13 minutes

Score: /11

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

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1 Work out.

(a) $\begin{pmatrix} -2 \\ -3 \end{pmatrix} + \begin{pmatrix} -4 \\ 7 \end{pmatrix}$

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

(b) $5 \begin{pmatrix} 2 \\ -8 \end{pmatrix}$

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

2 (a) $\mathbf{p} = \begin{pmatrix} 4 \\ -2 \end{pmatrix}$ $\mathbf{q} = \begin{pmatrix} -3 \\ 0 \end{pmatrix}$

Work out

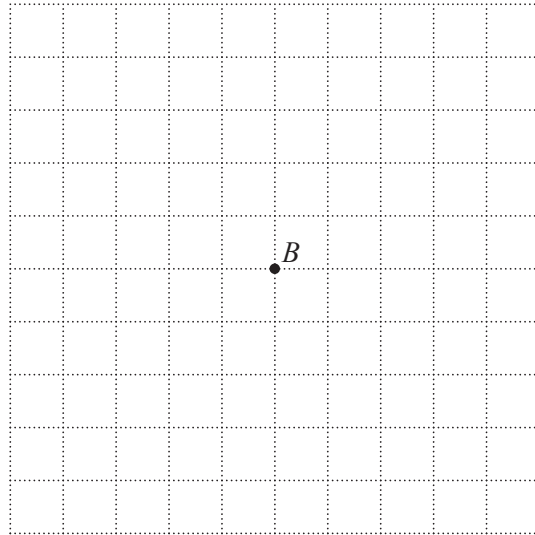
(i) $3\mathbf{p}$,

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

(ii) $\mathbf{p} - \mathbf{q}$.

$\begin{pmatrix} \\ \end{pmatrix}$ [1]

(b)



Point B is marked on the grid and $\vec{AB} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$.

On the grid, mark point A .

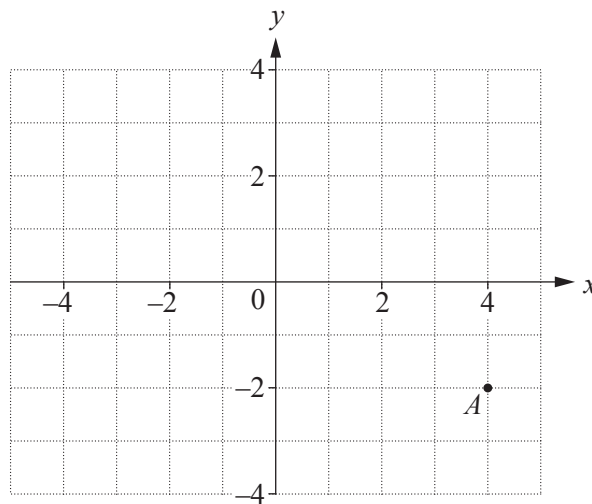
[1]

3 (a) Write $3\begin{pmatrix} -2 \\ 1 \end{pmatrix}$ as a single vector.

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

[1]

(b)

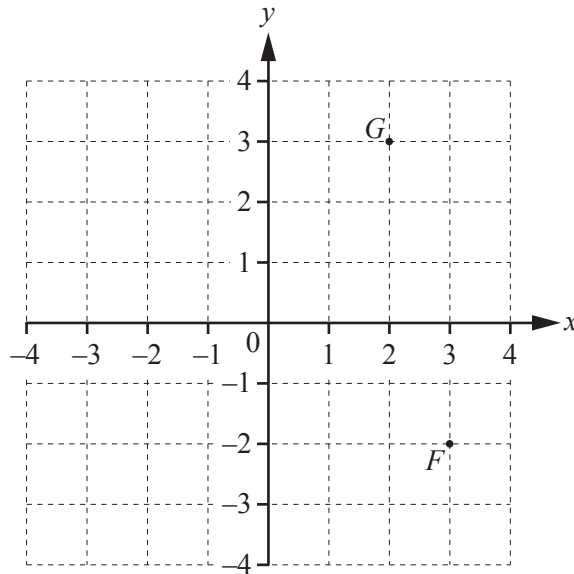


Point A is marked on the grid and $\vec{AB} = \begin{pmatrix} -7 \\ 4 \end{pmatrix}$.

On the grid, mark the point B .

[1]

4



Points F and G are marked on the grid.

(a) Write \vec{FG} as a column vector.

$$\vec{FG} = \begin{pmatrix} \\ \end{pmatrix} \quad [1]$$

(b) $\vec{GH} = \begin{pmatrix} -5 \\ -6 \end{pmatrix}$

Mark the point H on the grid.

[1]

5

$$\mathbf{a} = \begin{pmatrix} 3 \\ 5 \end{pmatrix} \quad \mathbf{b} = \begin{pmatrix} -8 \\ 7 \end{pmatrix}$$

Write each of the following as a single vector.

(a) $3\mathbf{a}$

$$\text{Answer(a)} \quad \begin{pmatrix} \\ \end{pmatrix} \quad [1]$$

(b) $\mathbf{a} - \mathbf{b}$

$$\text{Answer(b)} \quad \begin{pmatrix} \\ \end{pmatrix} \quad [1]$$