GCSE Exam Questions

Vectors | Geometry & Measure

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GCSE Exam Questions: Vectors

1)   Here is a vector:

What is this vector as a column vector?

    A   **B**   **C**   **D**

$$\begin{pmatrix} 5 \\ 4 \end{pmatrix} \quad \begin{pmatrix} 5 \\ -4 \end{pmatrix} \quad \begin{pmatrix} -5 \\ -4 \end{pmatrix} \quad \begin{pmatrix} -5 \\ 4 \end{pmatrix}$$

(1 mark)

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2)   Here are two column vectors:

$$a = \begin{pmatrix} 4 \\ -1 \end{pmatrix} \text{ and } b = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$$

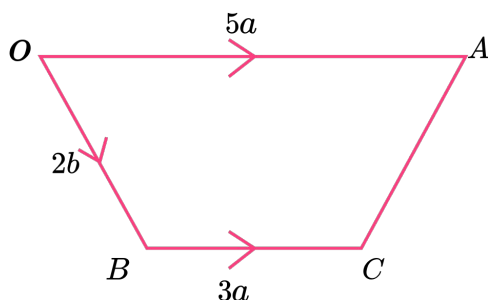On the grid, draw and label the vector 2*a* - *b*

(3 marks)

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1

GCSE Exam Questions: Vectors

3)   OABC is a trapezium.

(a) Find, in terms of **b** the vector $\overrightarrow{BO}$

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(1)

(b) Find, in terms of **a** and **b** the vector $\overrightarrow{OC}$

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(1)

(c) Find, in terms of **a** and **b** the vector $\overrightarrow{CA}$

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(2)
(4 marks)

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GCSE Exam Questions: Vectors

4)   ABCD is a kite.

The diagonals of the kite cross at O.

The length OD is 4 times the length of OB.
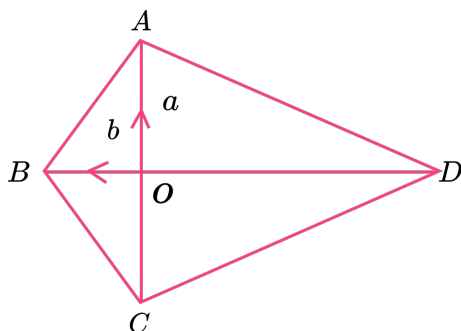
(a) Find, in terms of **a** the vector $\overrightarrow{AO}$

- -

(1)

(b) Find, in terms of **a** and **b** the vector $\overrightarrow{BA}$

- -

(1)
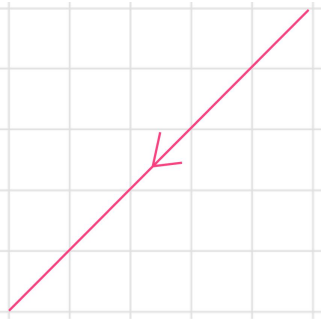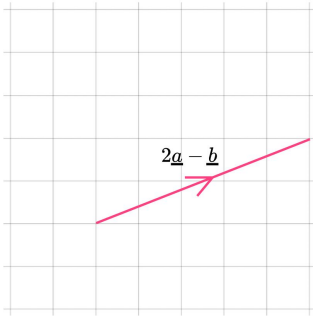
(c) Find, in terms of **a** and **b** the vector $\overrightarrow{DC}$

- -

(2)
(4 marks)

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3
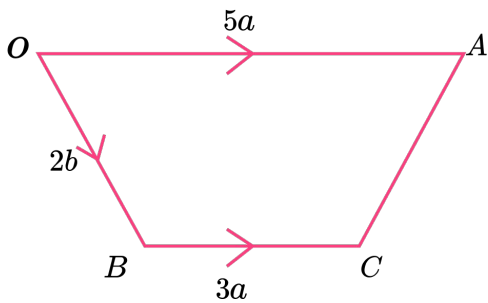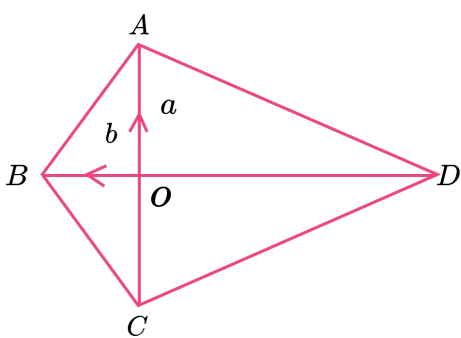
GCSE Exam Questions: Vectors Answers

	Question	Answer	Marks
1)	Here is a vector: What is this vector as a column vector? $\quad$ **A** $\qquad$ **B** $\qquad$ **C** $\qquad$ **D** $\begin{pmatrix} 5 \\ 4 \end{pmatrix} \begin{pmatrix} 5 \\ -4 \end{pmatrix} \begin{pmatrix} -5 \\ -4 \end{pmatrix} \begin{pmatrix} -5 \\ 4 \end{pmatrix}$	**C** $\begin{pmatrix} -5 \\ -4 \end{pmatrix}$	**(1)**
2)	Here are two column vectors: $a = \begin{pmatrix} 4 \\ -1 \end{pmatrix}$ and $b = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$ On the grid, draw and label the vector $2a - b$	$2a = \begin{pmatrix} 8 \\ -2 \end{pmatrix}$ $2a - b = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$ 	**(1)** **(1)** **(1)**

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GCSE Exam Questions: Vectors Answers

	Question	Answer	Marks
3)	OABC is a trapezium 		
(a)	Find, in terms of b the vector $\overrightarrow{BO}$	**(a)** -2b	**(1)**
(b)	Find, in terms of a and b the vector $\overrightarrow{OC}$	**(b)** 2b + 3a	**(1)**
(c)	Find, in terms of a and b the vector $\overrightarrow{CA}$	**(c)** -3a -2b + 5a 2a - 2b	**(1)** **(1)**
4)	ABCD is a kite. The diagonals of the kite cross at O. The length OD is 4 times the length of OB. 		
(a)	Find, in terms of a the vector $\overrightarrow{AO}$	**(a)** -a	**(1)**
(b)	Find, in terms of a and b the vector $\overrightarrow{BA}$	**(b)** a - b	**(1)**
(c)	Find, in terms of a and b the vector $\overrightarrow{DC}$	**(c)** $\overrightarrow{DO}$ = 4**b** 4b - a	**(1)** **(1)**

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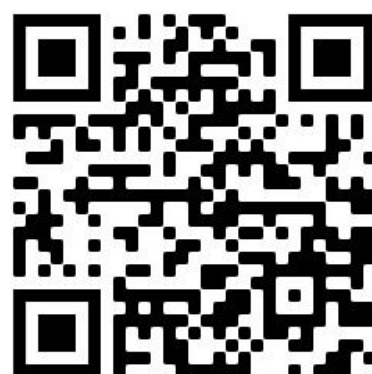
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