Vectors HW:

Question 1:

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

(a) Write down as a column vector

(i) **a** + **b**

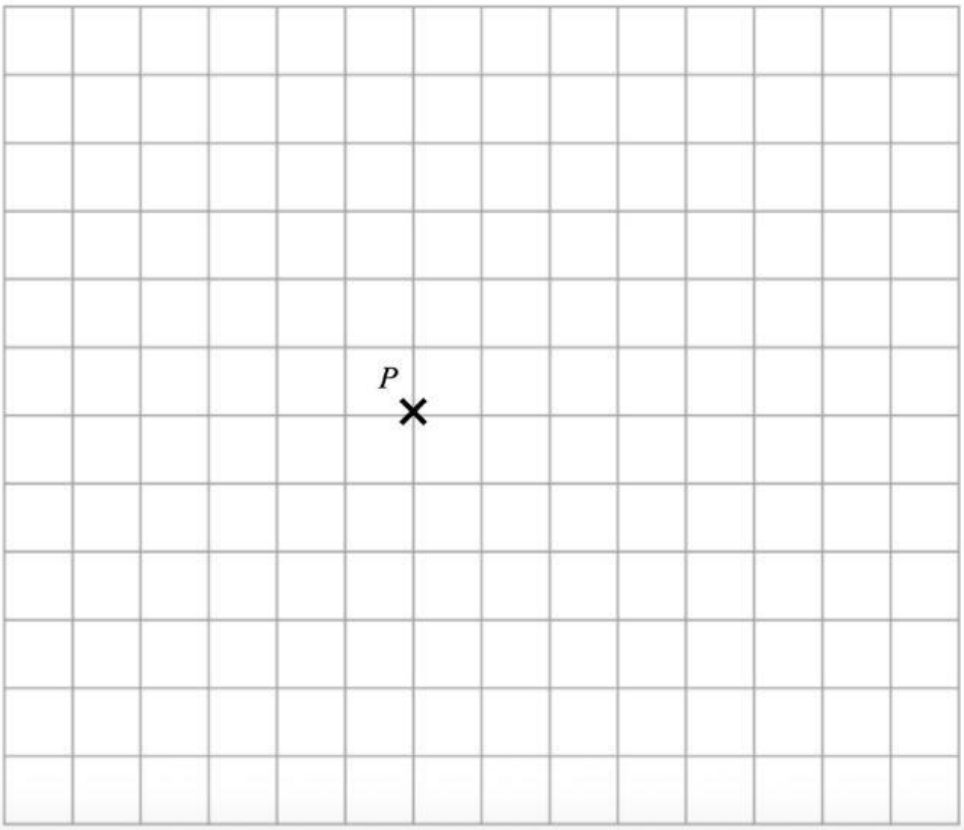
.....
(1)

(ii) 2**a** – **b**

.....
(2)

$$\boldsymbol{c}=\begin{pmatrix}5\\-4\end{pmatrix}$$

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



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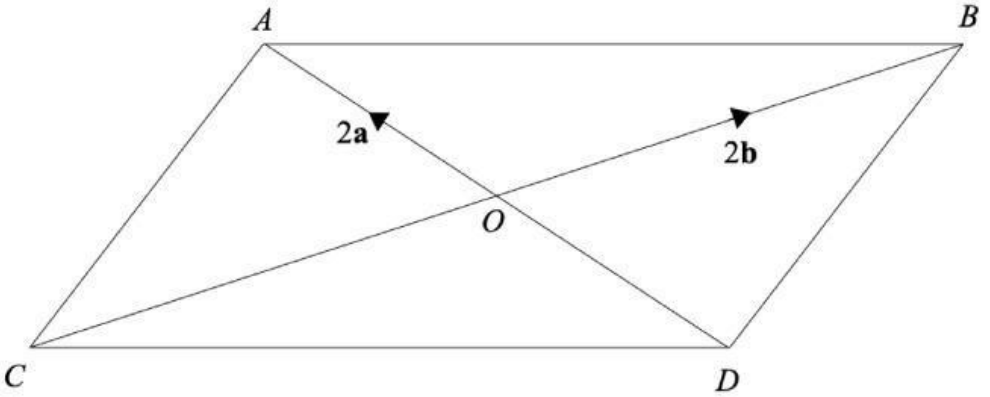
Question 2:

The diagram shows a parallelogram.



$\overrightarrow{OA} = 2\mathbf{a}$

$\overrightarrow{OB} = 2\mathbf{b}$

Hint: First find and label onto the diagram what C-to-O is, and what D-to-O is. This will help you solve parts a, b & c mor easily

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

.....
(1)

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

.....
(1)

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

.....
(1)

Question 3:

A is the point (5, –1) and B is the point (4, –3).

(a) Write down as a column vector $\overrightarrow{AB}$

.....
(1)

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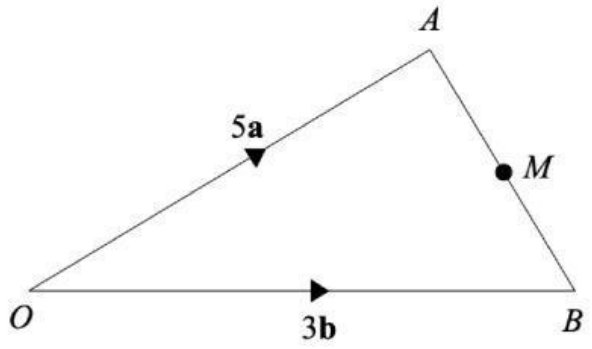
Question 4:

C is the point (1, 6) and D is the point (–3, 9).

(b) Write down as a column vector $\overrightarrow{CD}$

.....
(1)

Question 5:



$\overrightarrow{OA} = 5\mathbf{a}$

$\overrightarrow{OB} = 3\mathbf{b}$

M is the midpoint of AB

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

.....
(1)

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

.....
(1)

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

.....
(1)

End of questions

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