1 $\mathbf{a} = \begin{pmatrix} -3 \\ 2 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 1 \\ -5 \end{pmatrix}$

Work out $\mathbf{a} - 3\mathbf{b}$

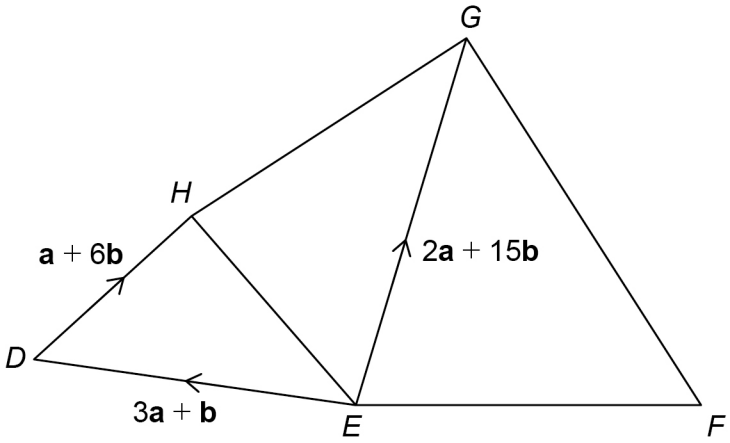
Circle your answer.

[1 mark]

$\begin{pmatrix} -6 \\ 17 \end{pmatrix}$ $\begin{pmatrix} -6 \\ -13 \end{pmatrix}$ $\begin{pmatrix} 0 \\ 17 \end{pmatrix}$ $\begin{pmatrix} 0 \\ -13 \end{pmatrix}$

2 Five points are connected by vectors.

Not drawn accurately



$\overrightarrow{FG} = 2\overrightarrow{EH}$

Work out $\overrightarrow{FE}$ in terms of **a** and **b**.

[4 marks]

Answer _____

3 Work out $\begin{pmatrix} -4 \\ 8 \end{pmatrix} - \begin{pmatrix} 3 \\ -2 \end{pmatrix}$

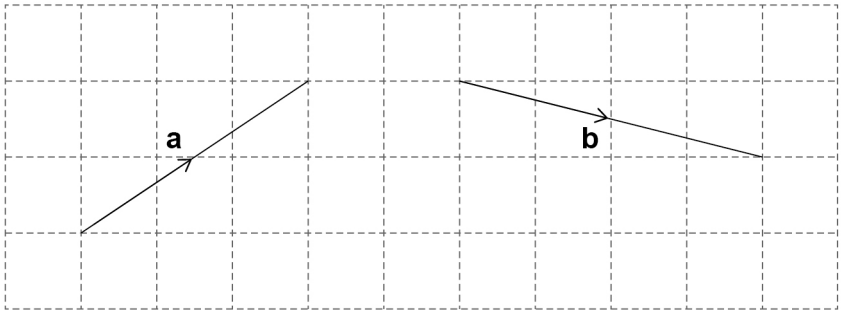
Circle your answer.

[1 mark]

$\begin{pmatrix} -7 \\ 10 \end{pmatrix}$ $\begin{pmatrix} -7 \\ 6 \end{pmatrix}$ $\begin{pmatrix} -1 \\ 10 \end{pmatrix}$ $\begin{pmatrix} -1 \\ 6 \end{pmatrix}$

4 The diagram shows the vectors **a** and **b**.

As a column vector $\mathbf{a} = \begin{pmatrix} 3 \\ 2 \end{pmatrix}$



4 (a) What is **b** as a column vector?

[2 marks]

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

4 (b) Work out 4**a** as a column vector.

[1 mark]

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

4 (c) $\mathbf{a} + \mathbf{c} = \begin{pmatrix} 3 \\ 0 \end{pmatrix}$

Work out **c** as a column vector.

Circle your answer.

[1 mark]

$\begin{pmatrix} 2 \\ 0 \end{pmatrix}$ $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$ $\begin{pmatrix} -2 \\ 0 \end{pmatrix}$ $\begin{pmatrix} 0 \\ -2 \end{pmatrix}$