GCSE HIGHER · REVISION MAT 2

Vectors

1 $\mathbf{p} = \begin{pmatrix} 5 \\ -1 \end{pmatrix}$ and $\mathbf{q} = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$

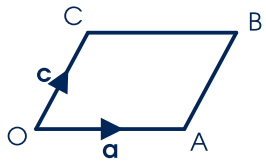
Find $\mathbf{p} - \mathbf{q}$.

2 $\mathbf{p} = \begin{pmatrix} 5 \\ -1 \end{pmatrix}$ and $\mathbf{q} = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$

Find $3\mathbf{q} + \mathbf{p}$.

3 Find the magnitude of $\begin{pmatrix} 6 \\ 8 \end{pmatrix}$.

4 OABC is a parallelogram.

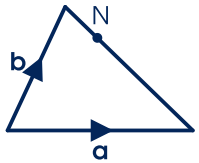


Find AC and OB in terms of $\mathbf{a}$ and $\mathbf{c}$.

5 $\mathbf{u} = \begin{pmatrix} 4 \\ k \end{pmatrix}$ is parallel to $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$.

Show that $k = -6$.

6 N lies on AB with AN : NB = 3 : 1.



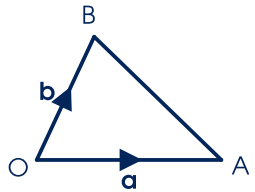
Find ON in terms of $\mathbf{a}$ and $\mathbf{b}$.

7 Show that $\begin{pmatrix} 2 \\ 5 \end{pmatrix} + \begin{pmatrix} 4 \\ -1 \end{pmatrix}$ is parallel to $\begin{pmatrix} 3 \\ 2 \end{pmatrix}$.

8 OA = $\mathbf{a}$ and OB = $\mathbf{b}$.

P is the point with OP = $3\mathbf{a} - 2\mathbf{b}$.

Show that P lies on the line through A and B extended.



Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Vectors

1 $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$

2 $\begin{pmatrix} 6 \\ 9 \end{pmatrix} + \begin{pmatrix} 5 \\ -1 \end{pmatrix}$

$\begin{pmatrix} 11 \\ 8 \end{pmatrix}$

3 $\sqrt{36 + 64}$

10

4 $\overrightarrow{AC} = \mathbf{c} - \mathbf{a}$

$\overrightarrow{OB} = \mathbf{a} + \mathbf{c}$

5 $\begin{pmatrix} 4 \\ k \end{pmatrix} = 2\begin{pmatrix} 2 \\ -3 \end{pmatrix}$

$k = -6$

6 $\overrightarrow{ON} = \mathbf{a} + \frac{3}{4}(\mathbf{b} - \mathbf{a})$

$\overrightarrow{ON} = \frac{1}{4}\mathbf{a} + \frac{3}{4}\mathbf{b}$

7 $\begin{pmatrix} 6 \\ 4 \end{pmatrix} = 2\begin{pmatrix} 3 \\ 2 \end{pmatrix}$

So they are parallel.

8 $\overrightarrow{AP} = 2\mathbf{a} - 2\mathbf{b} = -2(\mathbf{b} - \mathbf{a})$

AP is a multiple of AB
and passes through A.

Mr&Mrs MATHS