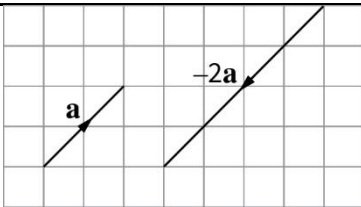
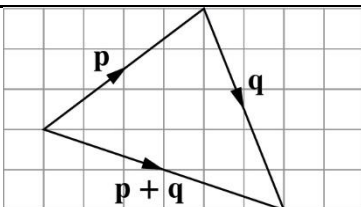


# Oxford Revise | AQA GCSE Maths Foundation | Answers

## Chapter 26 Vectors

Question	Answer	Extra information	Marks
26.1	$\mathbf{f} = \begin{pmatrix} -2 \\ 4 \end{pmatrix}, \mathbf{g} = \begin{pmatrix} 5 \\ 0 \end{pmatrix}, \mathbf{h} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$		3
26.2 (a)	Vector $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$ correctly drawn on the grid		1
26.2 (b)	$\begin{pmatrix} -3 \\ 4 \end{pmatrix}$		1
26.3			1
26.4	$\begin{pmatrix} -6 \\ 3 \end{pmatrix}$		2
26.5			4

Question	Answer	Extra information	Marks
26.6	$\overrightarrow{OC} = \begin{pmatrix} 3 \\ 3 \end{pmatrix}$		2
26.7 (a)	3a		1
26.7 (b)	-b		1
26.8 (a)	-p		1
26.8 (b)	$\overrightarrow{PQ} = \overrightarrow{OR} = \mathbf{r}$ $\overrightarrow{OP} + \overrightarrow{PQ} = \mathbf{p} + \mathbf{r}$	Also accept $\mathbf{r} + \mathbf{p}$	1
26.8 (c)	$\overrightarrow{QO} = \overrightarrow{QP} + \overrightarrow{PO} = -\mathbf{r} - \mathbf{p}$	Also accept $-\mathbf{p} - \mathbf{r}$	2
26.9 (a)	$4 \begin{pmatrix} -2 \\ 3 \end{pmatrix} = \begin{pmatrix} -8 \\ 12 \end{pmatrix}$		1
26.9 (b)	$\begin{pmatrix} -2 \\ 3 \end{pmatrix} + \begin{pmatrix} -1 \\ 4 \end{pmatrix} = \begin{pmatrix} -3 \\ 7 \end{pmatrix}$		1
26.9 (c)	$2 \begin{pmatrix} -1 \\ 4 \end{pmatrix} - 3 \begin{pmatrix} -2 \\ 3 \end{pmatrix} = \begin{pmatrix} 4 \\ -1 \end{pmatrix}$	$\begin{pmatrix} -2 \\ 8 \end{pmatrix}$ or $\begin{pmatrix} -6 \\ 9 \end{pmatrix}$ Correct answer	1 1

Question	Answer	Extra information	Marks
26.10	$2 \begin{pmatrix} -x \\ 3 \end{pmatrix} = \begin{pmatrix} y \\ x \end{pmatrix}$ <p>Equating components gives <math>x = 6</math> (bottom row), and <math>-2x = y</math> (top row), so <math>y = -12</math></p>	<p>Equate the top and bottom components</p> <p>Substitute <math>x = 6</math> into your top equation</p> <p><math>x = 6</math></p> <p><math>y = -12</math></p>	1 1 1 1
26.11 (a)	$\overrightarrow{OT} = \overrightarrow{QO} = -3\mathbf{b}$		1
26.11 (b)	$\overrightarrow{PQ} = \overrightarrow{PO} + \overrightarrow{OQ} = -2\mathbf{a} + 3\mathbf{b}$	Also accept $3\mathbf{b} - 2\mathbf{a}$	2
26.11 (c)	$\overrightarrow{OU} = \overrightarrow{OP} + \overrightarrow{PU} = 2\mathbf{a} - 3\mathbf{b}$	Also accept $-3\mathbf{b} + 2\mathbf{a}$	2
26.11 (d)	$\overrightarrow{UQ} = \overrightarrow{UP} + \overrightarrow{PQ} = 3\mathbf{b} - 2\mathbf{a} + 3\mathbf{b} = 6\mathbf{b} - 2\mathbf{a}$	$\overrightarrow{UQ} + \overrightarrow{PQ}$ Correct answer Also accept $-2\mathbf{a} + 6\mathbf{b}$	3
26.12 (a)	$\sin 0^\circ = 0$		1
26.12 (b)	$\sin 60^\circ = \frac{\sqrt{3}}{2}$		1
26.12 (c)	$\cos 45^\circ = \frac{\sqrt{2}}{2}$		1
26.12 (d)	$\tan 30^\circ = \frac{\sqrt{3}}{3}$		1

Question	Answer	Extra information	Marks
26.13	Translation by vector $\begin{pmatrix} -6 \\ -2 \end{pmatrix}$	Translation Correct column vector	1 1