Maths.scot

National 5 Maths
Vector Components

SQA past paper and specimen paper questions and answers by topic

Visit Maths.scot for full worked solutions to each of these questions.

National 5 Maths
SQA 2014 Paper 1
Question 4

National 5 Maths
Maths.scot

Find the resultant vector $2\boldsymbol{u}-\boldsymbol{v}$ when $\boldsymbol{u}=\begin{pmatrix}-2\\3\\5\end{pmatrix}$ and $\boldsymbol{v}=\begin{pmatrix}0\\-4\\7\end{pmatrix}$.

Express your answer in component form. **2**

Answer:

$$\begin{pmatrix}-4\\10\\3\end{pmatrix}$$

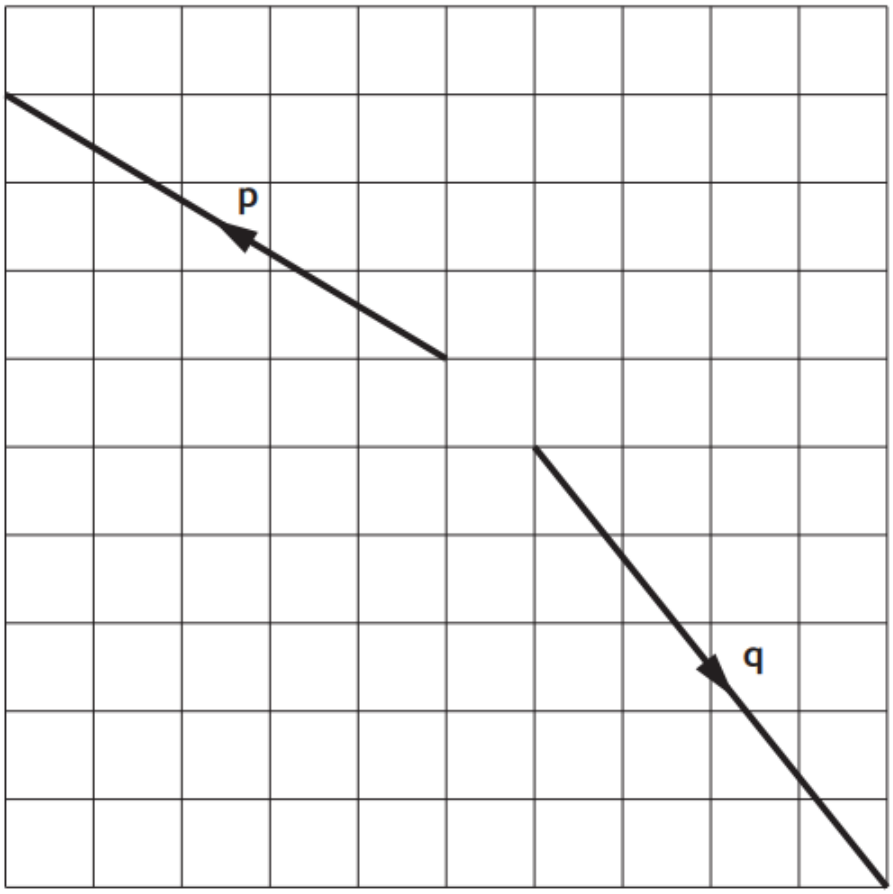
National 5 Maths
SQA 2015 Paper 2
Question 5

National 5 Maths
Maths.scot

The vectors **p** and **q** are shown in the diagram below.

Find the resultant vector **p** + **q**.

Express your answer in component form.



2

Answer:

$\begin{pmatrix} -1 \\ -2 \end{pmatrix}$

National 5 Maths
SQA 2016 Paper 1
Question 1

National 5 Maths
Maths.scot

Given $\mathbf{p} = \begin{pmatrix} 4 \\ -6 \end{pmatrix}$ and $\mathbf{q} = \begin{pmatrix} -5 \\ -1 \end{pmatrix}$.

Find the resultant vector $\frac{1}{2}\mathbf{p} + \mathbf{q}$.

Express your answer in component form. **2**

Answer:

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

National 5 Maths
SQA 2018 Paper 1
Question 4

National 5 Maths
Maths.scot

Two vectors are given by $\mathbf{u} = \begin{pmatrix} 1 \\ 5 \\ 1 \end{pmatrix}$ and $\mathbf{u} + \mathbf{v} = \begin{pmatrix} 6 \\ -4 \\ 3 \end{pmatrix}$.

Find vector $\mathbf{v}$.

Express your answer in component form. **2**

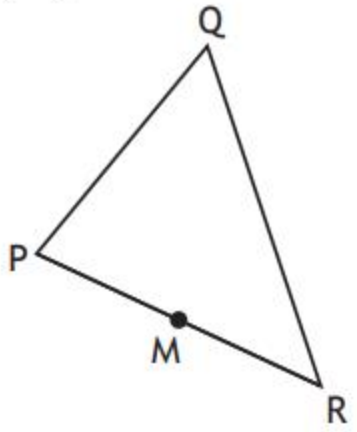
Answer:

$$\begin{pmatrix} 5 \\ -9 \\ 2 \end{pmatrix}$$

National 5 Maths
SQA 2019 Paper 1
Question 10

National 5 Maths
Maths.scot

In triangle PQR, $\overrightarrow{PR} = \begin{pmatrix} 6 \\ -4 \end{pmatrix}$ and $\overrightarrow{RQ} = \begin{pmatrix} -1 \\ 8 \end{pmatrix}$.



(a) Express $\overrightarrow{PQ}$ in component form. **1**

M is the midpoint of PR.

(b) Express $\overrightarrow{MQ}$ in component form. **2**

Answers:

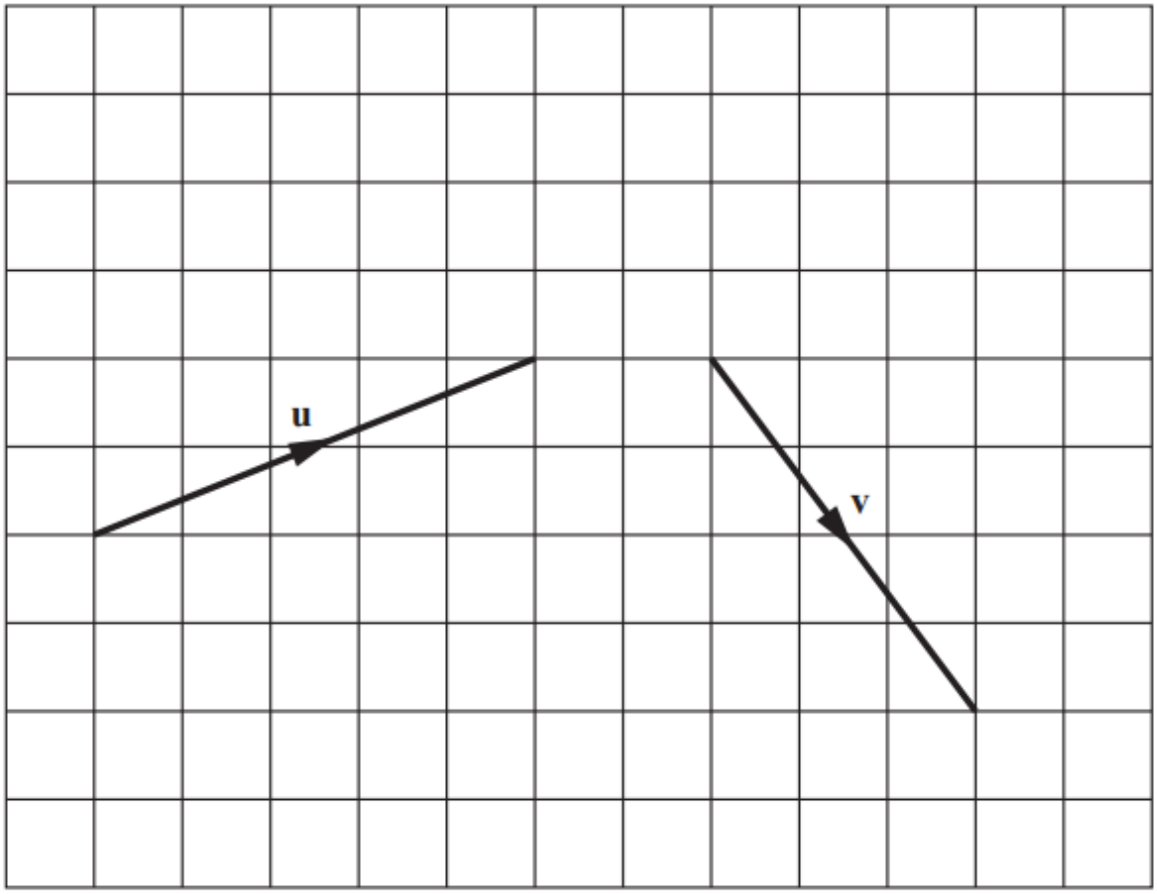
(a) $\begin{pmatrix} 5 \\ 4 \end{pmatrix}$

(b) $\begin{pmatrix} 2 \\ 6 \end{pmatrix}$

National 5 Maths
SQA 2021 Paper 2
Question 5

National 5 Maths
Maths.scot

The vectors $\mathbf{u}$ and $\mathbf{v}$ are shown in the diagram below.



Find the resultant vector $\mathbf{u} - \mathbf{v}$.

Express your answer in component form. 2

Answer:

$$\begin{pmatrix} 2 \\ 6 \end{pmatrix}$$