AQA – Vectors – GCSE Mathematics Paper-3

1.   May/2020/Paper_3F/No.31

$$c = \begin{pmatrix} 4 \\ 9 \end{pmatrix} \qquad d = \begin{pmatrix} 2 \\ -5 \end{pmatrix}$$

Work out $4c + 3d$

[2 marks]

Answer $\begin{pmatrix} \\ \end{pmatrix}$
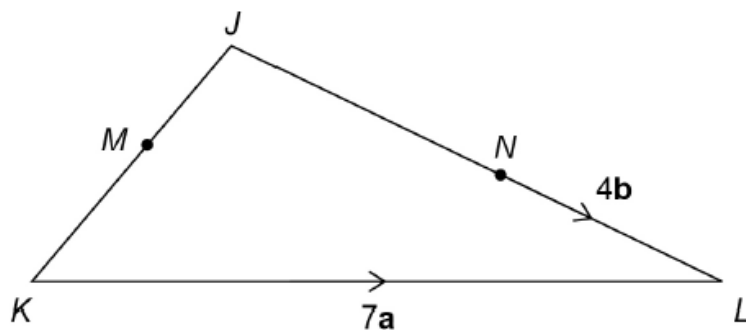
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2. May/2020/Paper_3H/No.23

In triangle *JKL*

M is the midpoint of *JK*

$JN : NL = 3 : 2$

$\overrightarrow{KL} = 7\mathbf{a}$ $\overrightarrow{NL} = 4\mathbf{b}$

Not drawn accurately

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

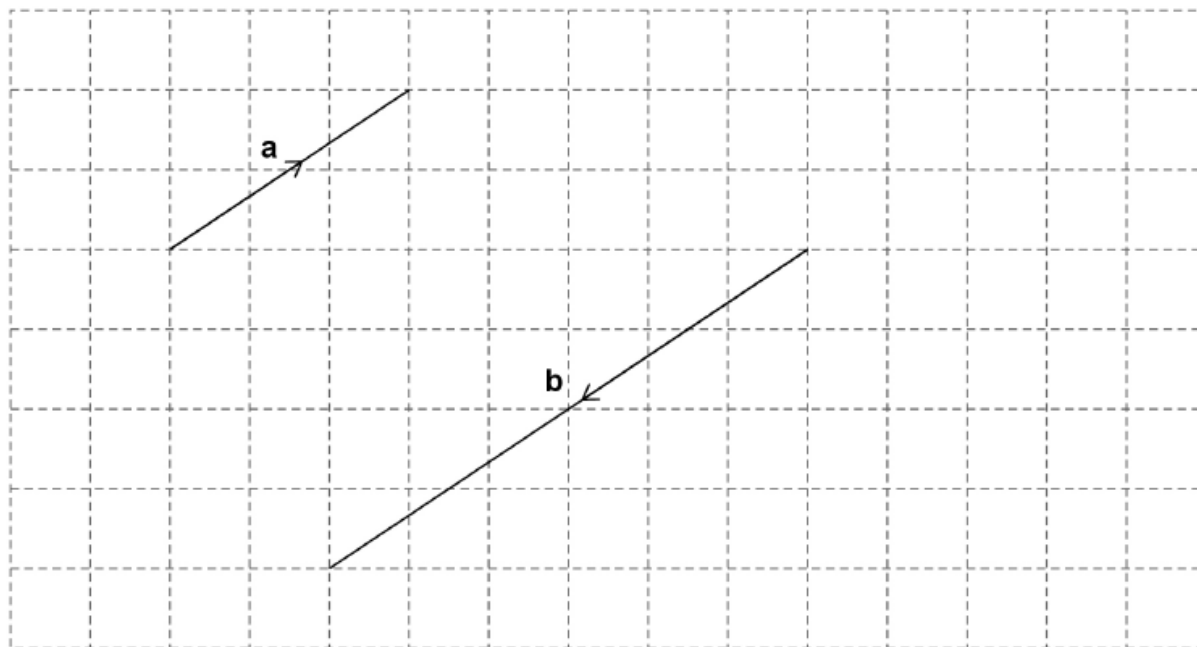Give your answer in its simplest form.

[3 marks]

Answer _____

3. June/2019/Paper_3H/No.13
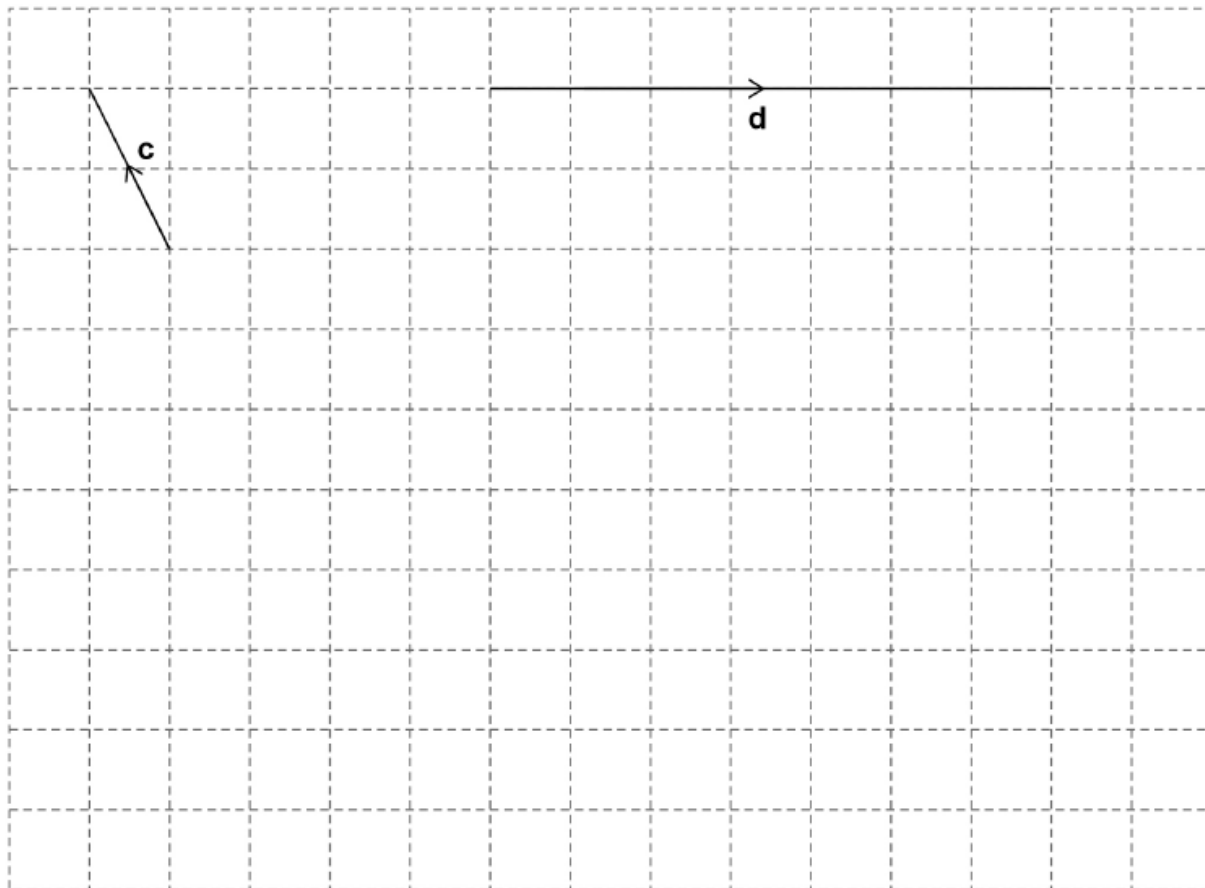
(a)   Vectors **a** and **b** are drawn on a grid.

Write **b** in terms of **a**.

[1 mark]

b = _____

(b) Vectors **c** and **d** are drawn on a grid.
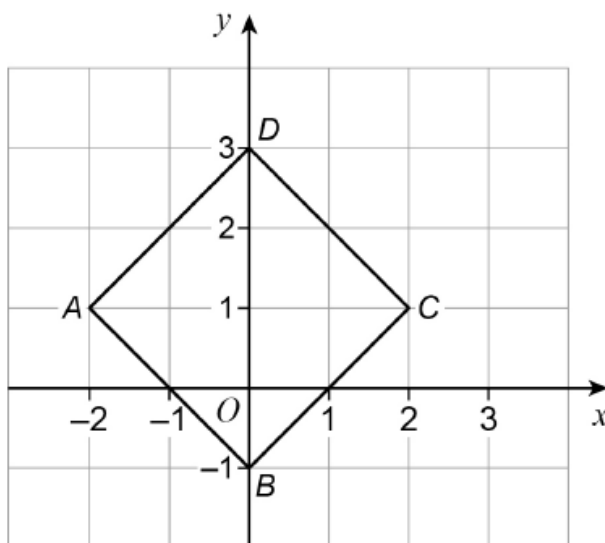

On the grid above, draw a vector representing   **c – d**

[2 marks]

4.

ABCD is a square.

A is (−2, 1)   B is (0, −1)   C is (2, 1)   D is (0, 3)

(a)   A **single** transformation of ABCD is such that

B is mapped to D

D is mapped to B

A and C are invariant points.

Describe fully the transformation.

[2 marks]

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(b) A different **single** transformation of *ABCD* is such that

B is mapped to D
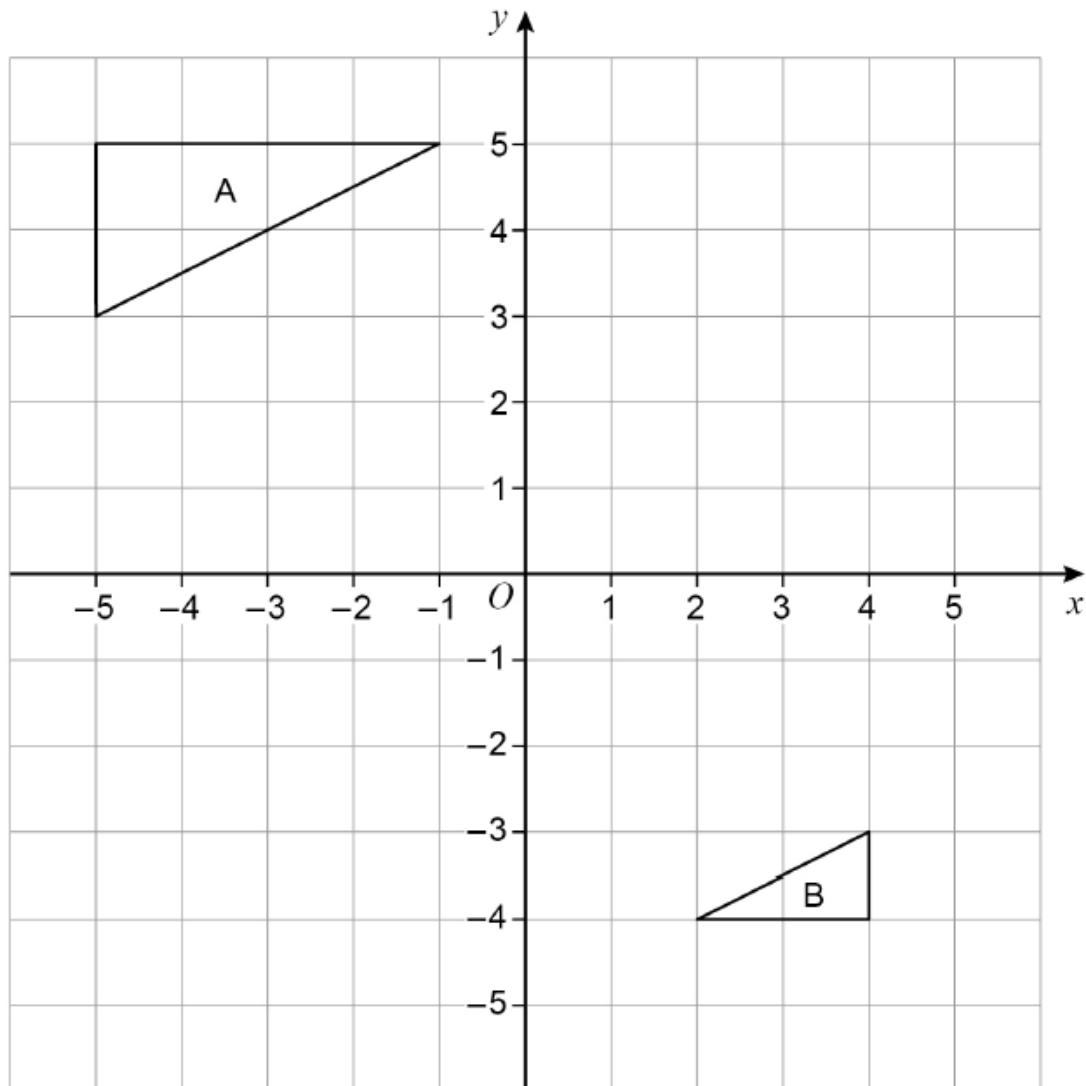
D is mapped to B

the only invariant point is (0, 1)

Describe fully the transformation.

[3 marks]

5.   Nov/2019/Paper_3H/No.24
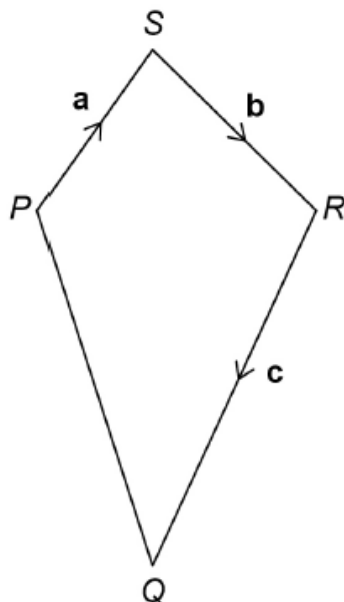
Shape A and shape B are shown on the grid.

Describe the **single** transformation that maps shape A to shape B.

[3 marks]

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_____
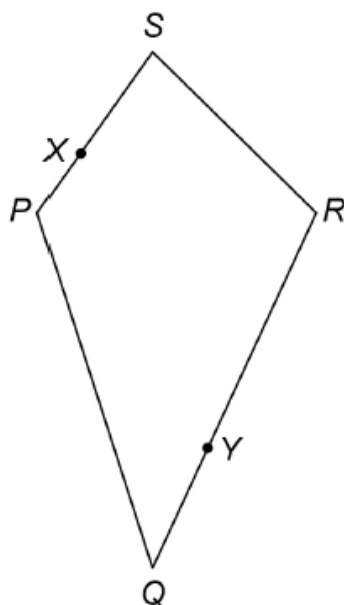
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6.

Here is quadrilateral *PQRS*.

$$\overrightarrow{PS} = \mathbf{a} \qquad \overrightarrow{SR} = \mathbf{b} \qquad \overrightarrow{RQ} = \mathbf{c}$$

Not drawn accurately

X is a point on *PS* where $PX : XS = 1 : 2$

Y is a point on *RQ* where $RY : YQ = 2 : 1$

Not drawn accurately

Is *XY* parallel to *PQ*?

Show working to support your answer.

[3 marks]

Is *XY* parallel to *PQ*?

[3 marks]