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Edexcel GCSE
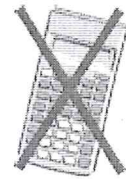## Mathematics (Linear) – 1MA0

MIXED   SOLUTIONS
TRANSFORMATIONS

Materials required for examination
Ruler graduated in centimetres and
millimetres, protractor, compasses,
pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions

Use black ink or ball-point pen.
Fill in the boxes at the top of this page with your name, centre number and candidate number.
Answer all questions.
Answer the questions in the spaces provided – there may be more space than you need.
Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to
spend on **each** question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication
will be assessed – you should take particular care on these questions with your spelling, punctuation
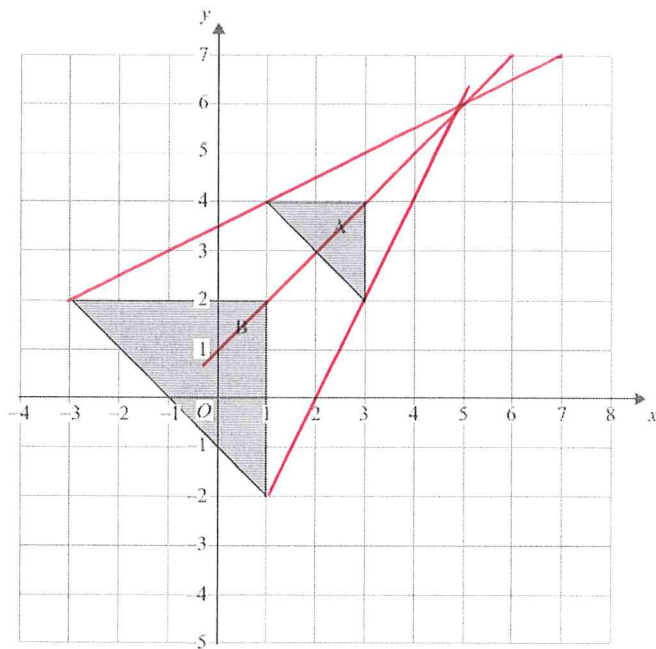and grammar, as well as the clarity of expression.

Advice

Read each question carefully before you start to answer it.
Keep an eye on the time.
Try to answer every question.
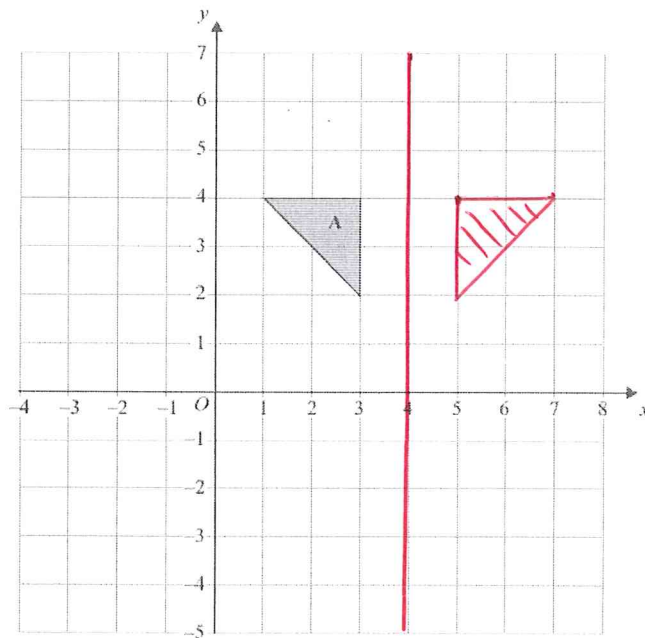Check your answers if you have time at the end.

1.

Triangle **A** and triangle **B** are drawn on the grid.

(a) Describe fully the single transformation which maps triangle **A** onto triangle **B**.

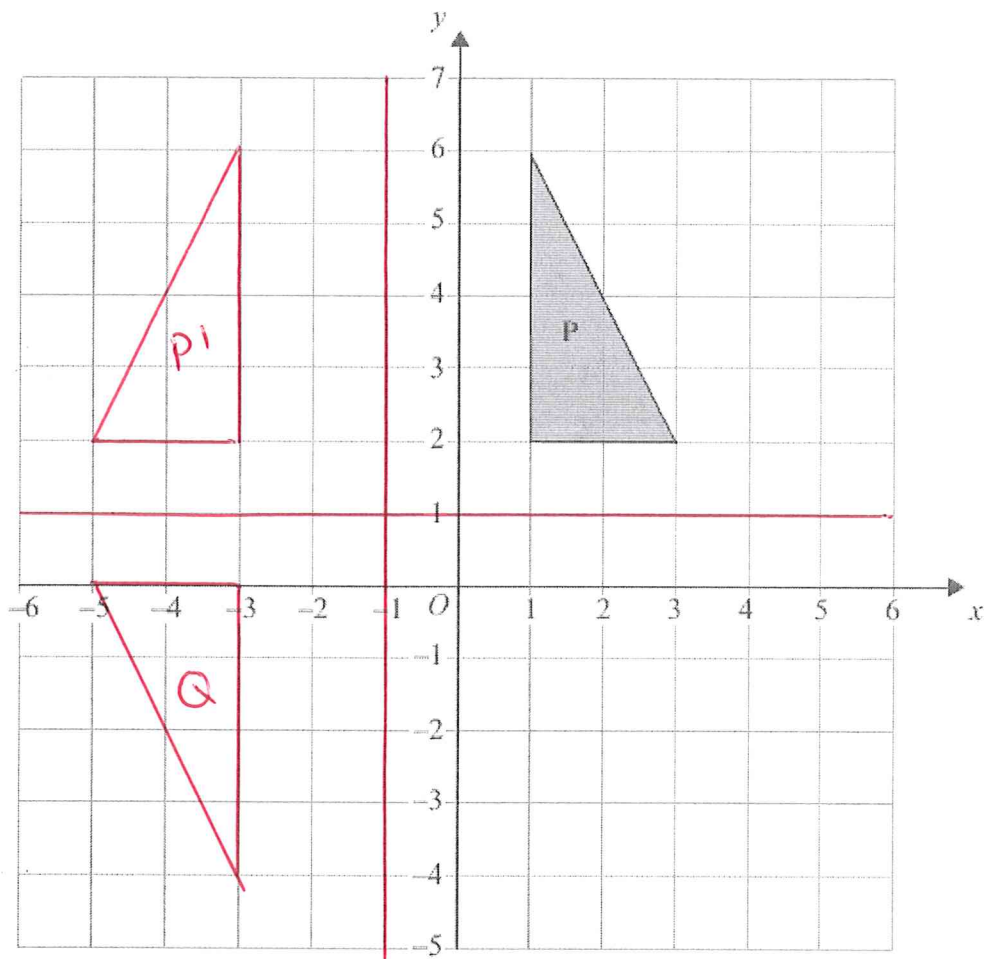Enlargement with centre (5,6)
Scale factor 2.

(3)

(b) Reflect triangle **A** in the line $x = 4$

(2)

(5 marks)

2.

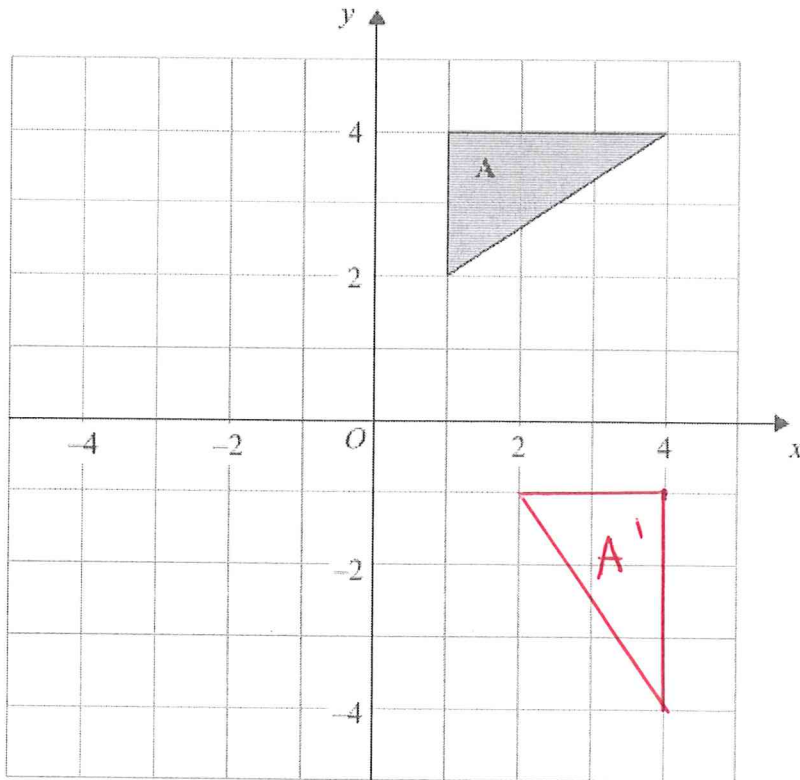

Triangle **P** is drawn on a coordinate grid.

The triangle **P** is reflected in the line $x = -1$ and then reflected in the line $y = 1$ to give triangle **Q**.

Describe fully the single transformation which maps triangle **P** onto triangle **Q**.
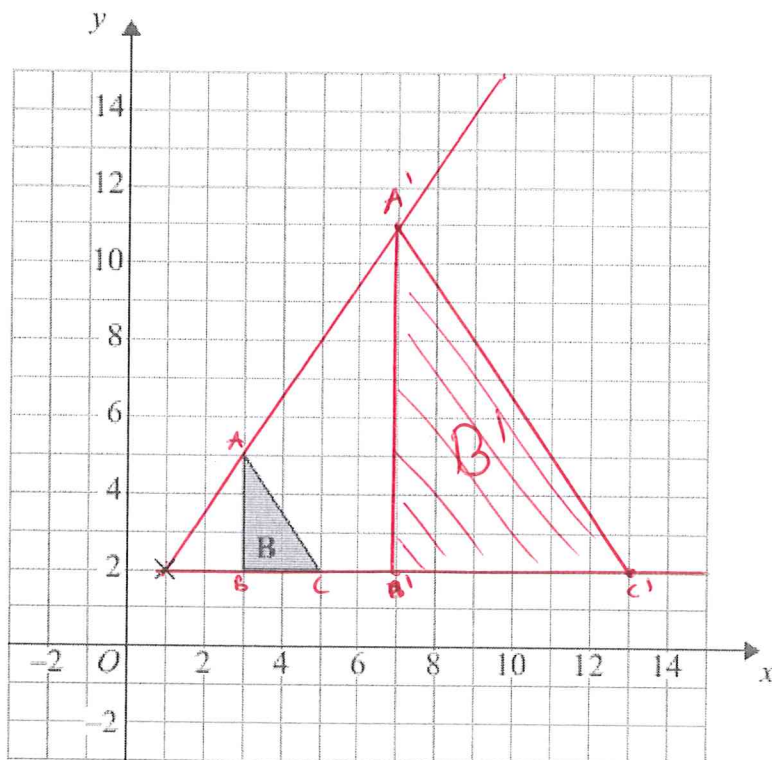
Rotation about (-1,1) clockwise 180°

(3 marks)

3.

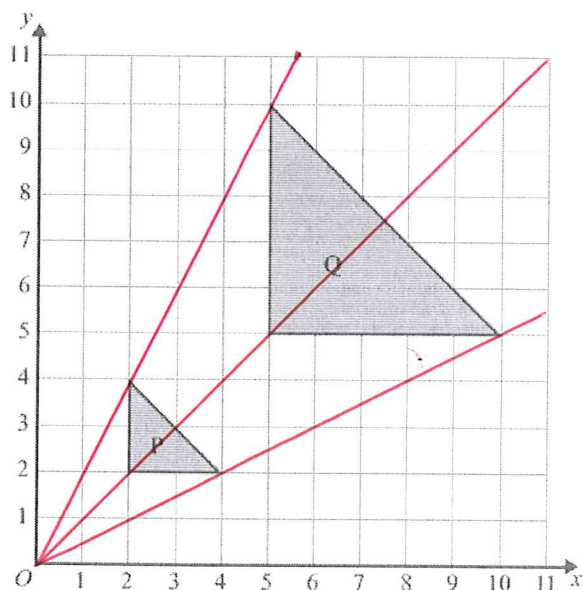
(a) Rotate triangle **A** 90° clockwise, centre *O*.

(2)

(b) Enlarge triangle **B** by scale factor 3, centre (1, 2).
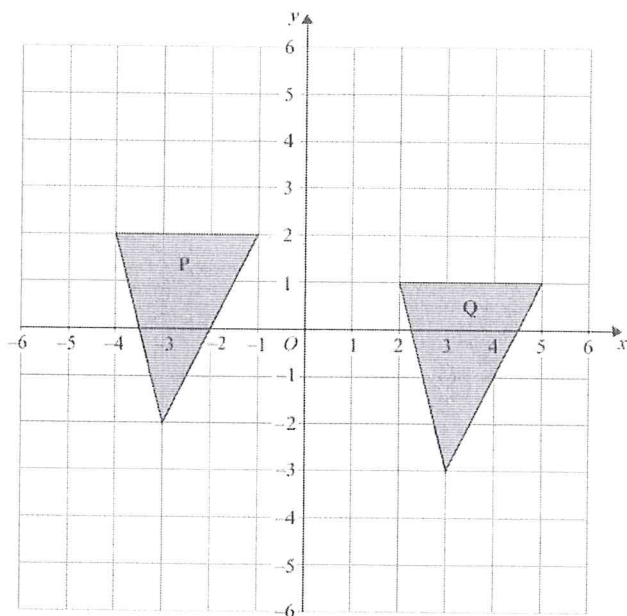
(3)

(5 marks)

4.

Describe fully the single transformation that maps shape **P** onto shape **Q**.

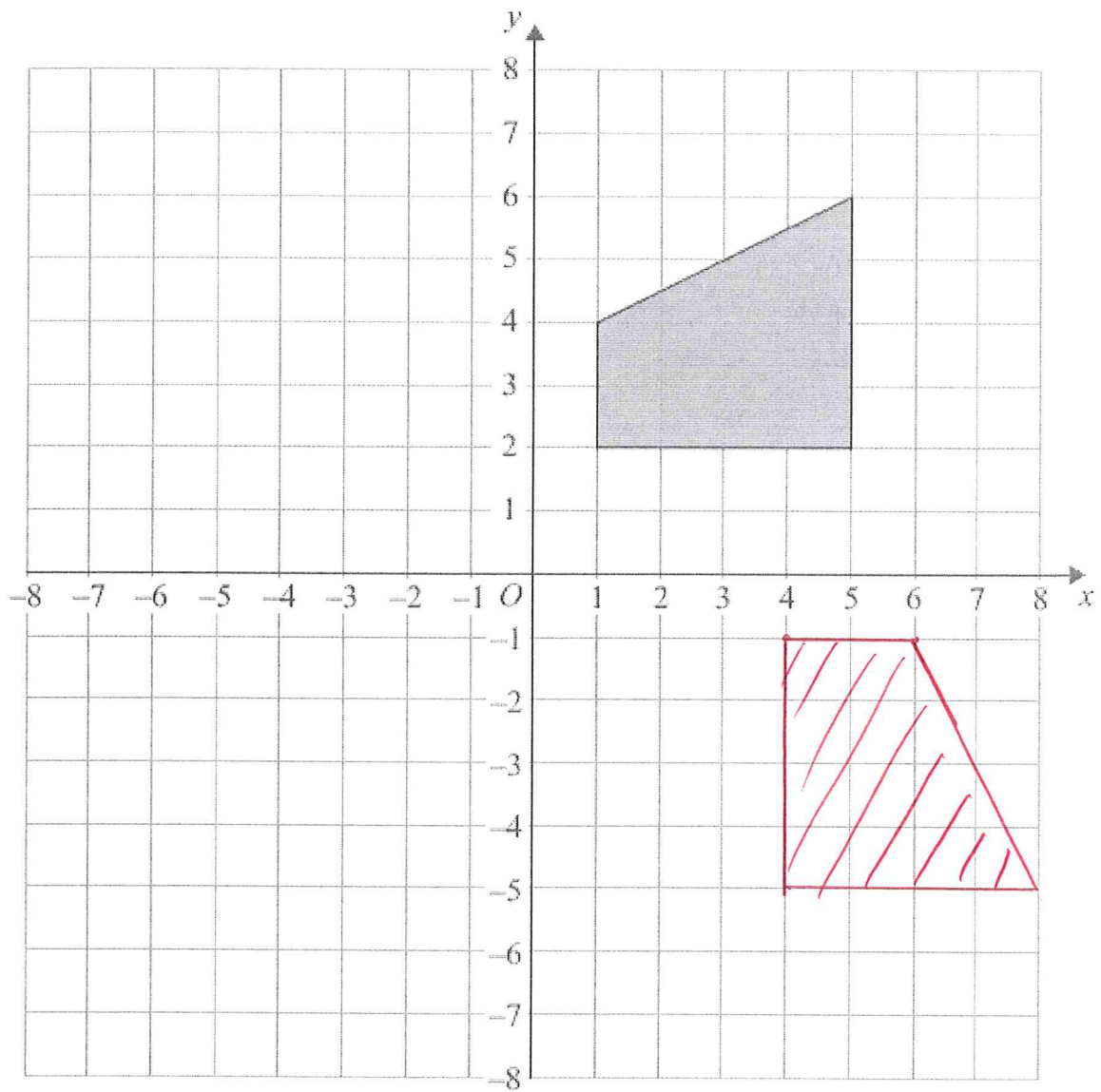Enlargement about (0,0) scale factor 2½

(3 marks)

5.

Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

Translation through the vector $\begin{pmatrix} 6 \\ -1 \end{pmatrix}$

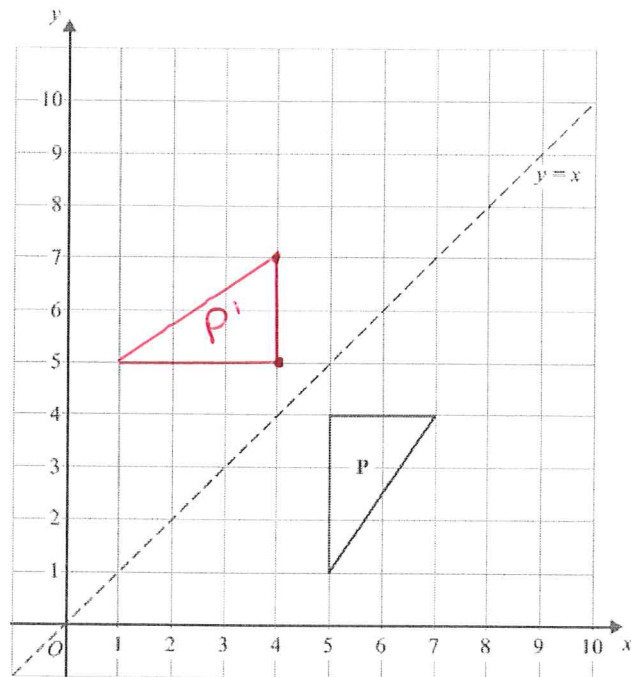(3 marks)

8.

Rotate the shaded shape 90^0 clockwise about the point (1, -1).
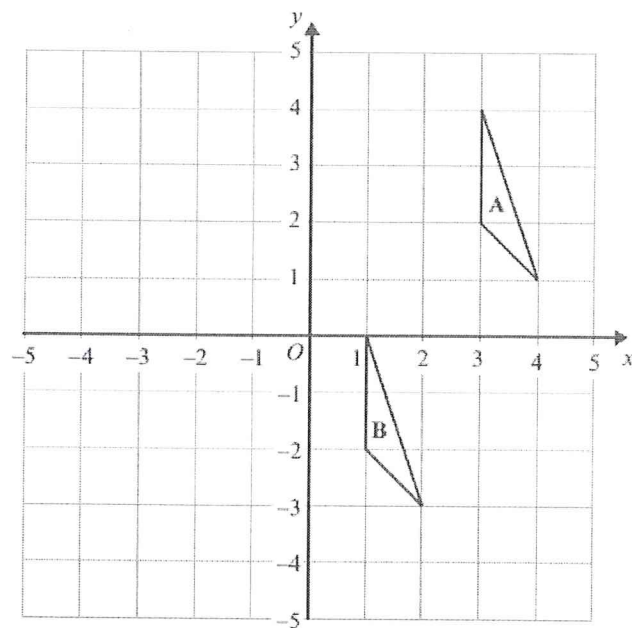
(3 marks)

6. (a)

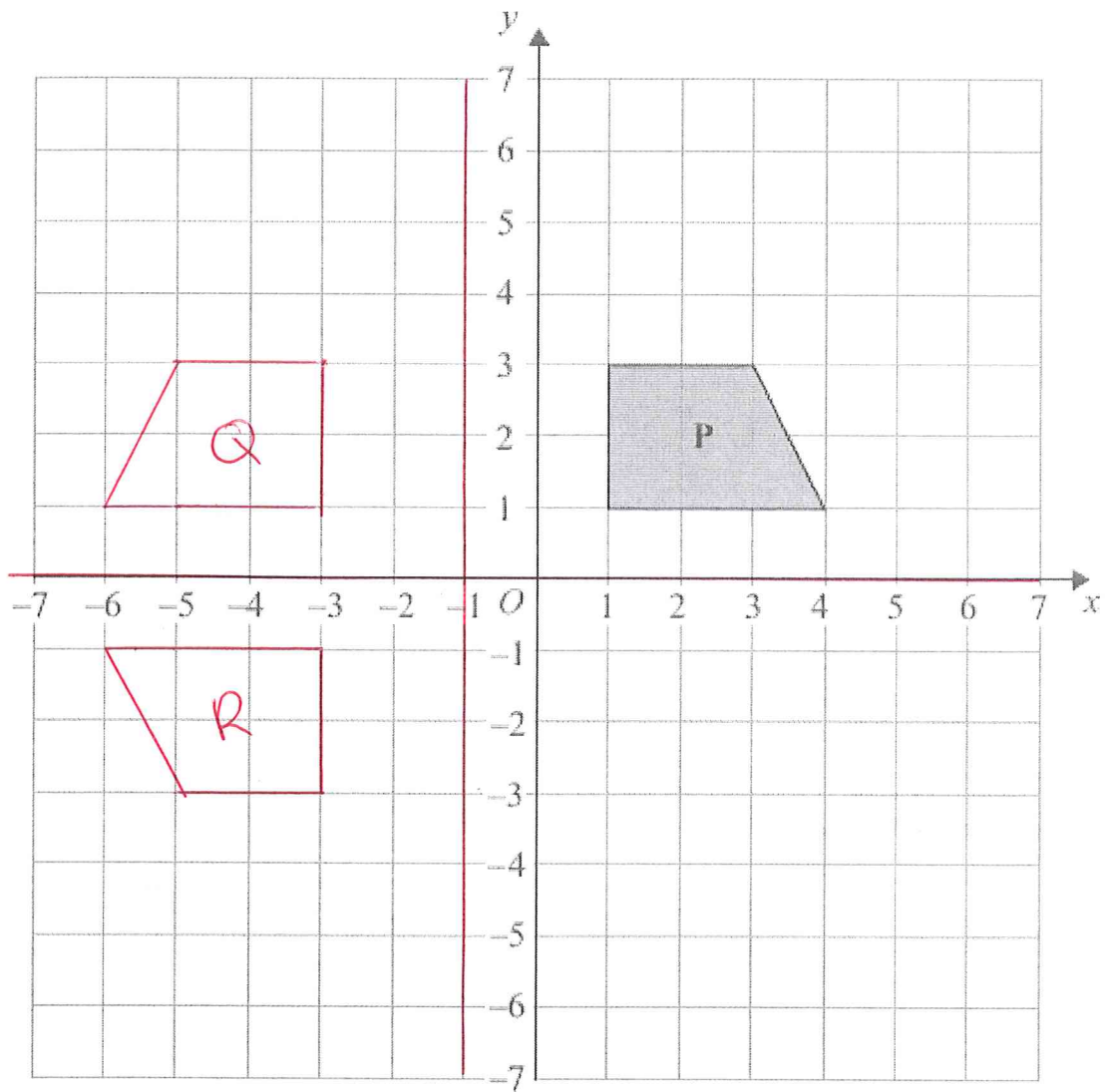Reflect shape **P** in the line $y = x$

(2)

(b)

Describe fully the single transformation that maps triangle **A** onto triangle **B**.

Translation through the vector

$\begin{pmatrix} 2 \\ 4 \end{pmatrix}$

(2)

(4 marks)

7.

Shape **P** is reflected in the line $x = -1$ to give shape **Q**.

Shape **Q** is reflected in the line $y = 0$ to give shape **R**.

Describe fully the **single** transformation that maps shape **P** onto shape **R**.

Rotation about (-1,0) clockwise 180°

....

....

(3 marks)