

Write your name here

Surname

Other names

In the style of:
Pearson Edexcel

Centre Number

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Candidate Number

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Mathematics

Transformations

Foundation Tier

GCSE style questions arranged by topic

Paper Reference

1MA0/1F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks



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 not be used.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

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.

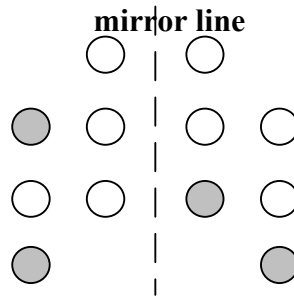
Turn over ►



1

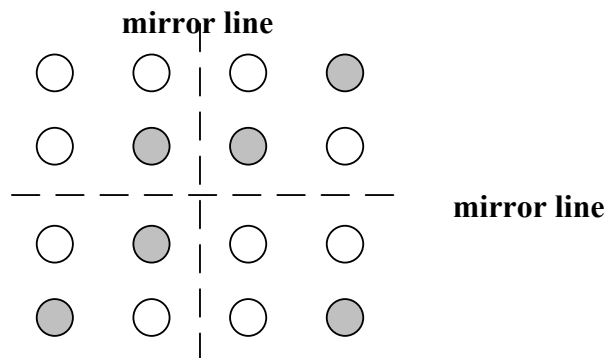
Here are some patterns of circles.

(a) Shade **two** more circles to give this pattern symmetry in the mirror line.



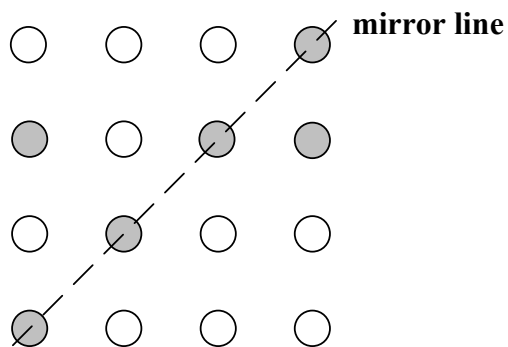
(2)

(b) Shade **two** more circles to give this pattern symmetry in both mirror lines.



(2)

(c) Shade **four** more circles to give this pattern symmetry in the mirror line.

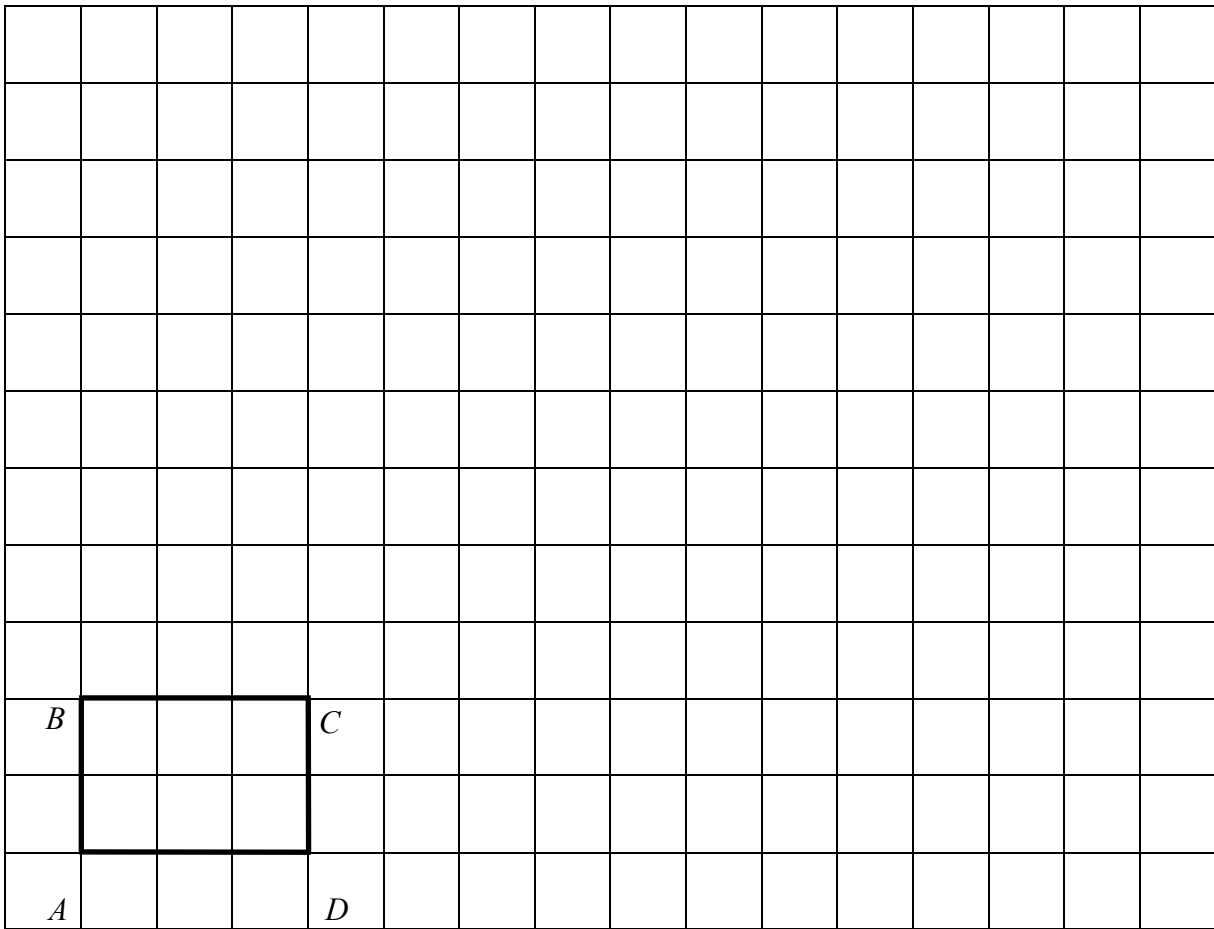


(2)

(Total for Question 1 is 6 marks)



2 The shape $ABCD$ is drawn on a grid.



(a) Enlarge $ABCD$ by scale factor 3. (2)

(b) How many times bigger is the area of the enlarged shape than the area of $ABCD$?

.....

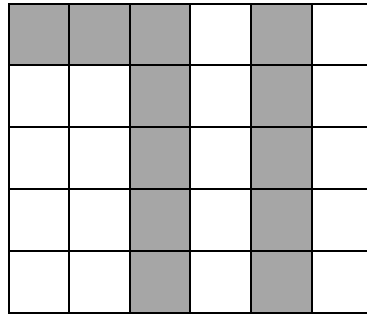
(2)

(Total for Question 2 is 4 marks)



3

The number 71 is shaded on the grid.



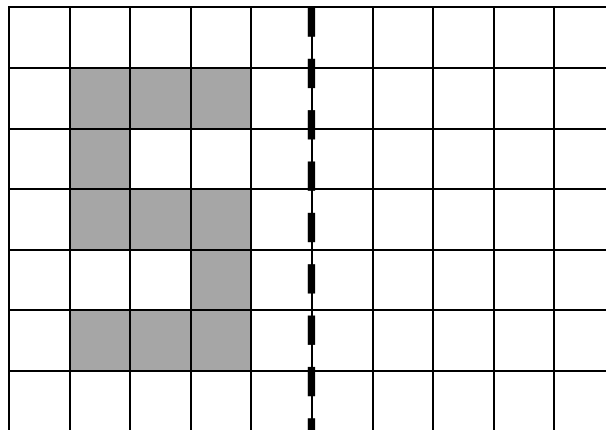
(a) What fraction of the grid is shaded?

Give your answer in its simplest form.

.....

(b) The letter S is shaded on this grid.

(3)



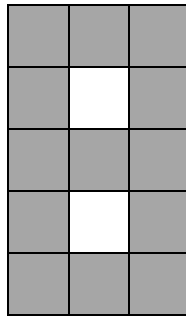
mirror line

Draw the reflection of the letter S in the mirror line.

(2)



3 (c) The number eight is drawn.



Write down the order of rotational symmetry.

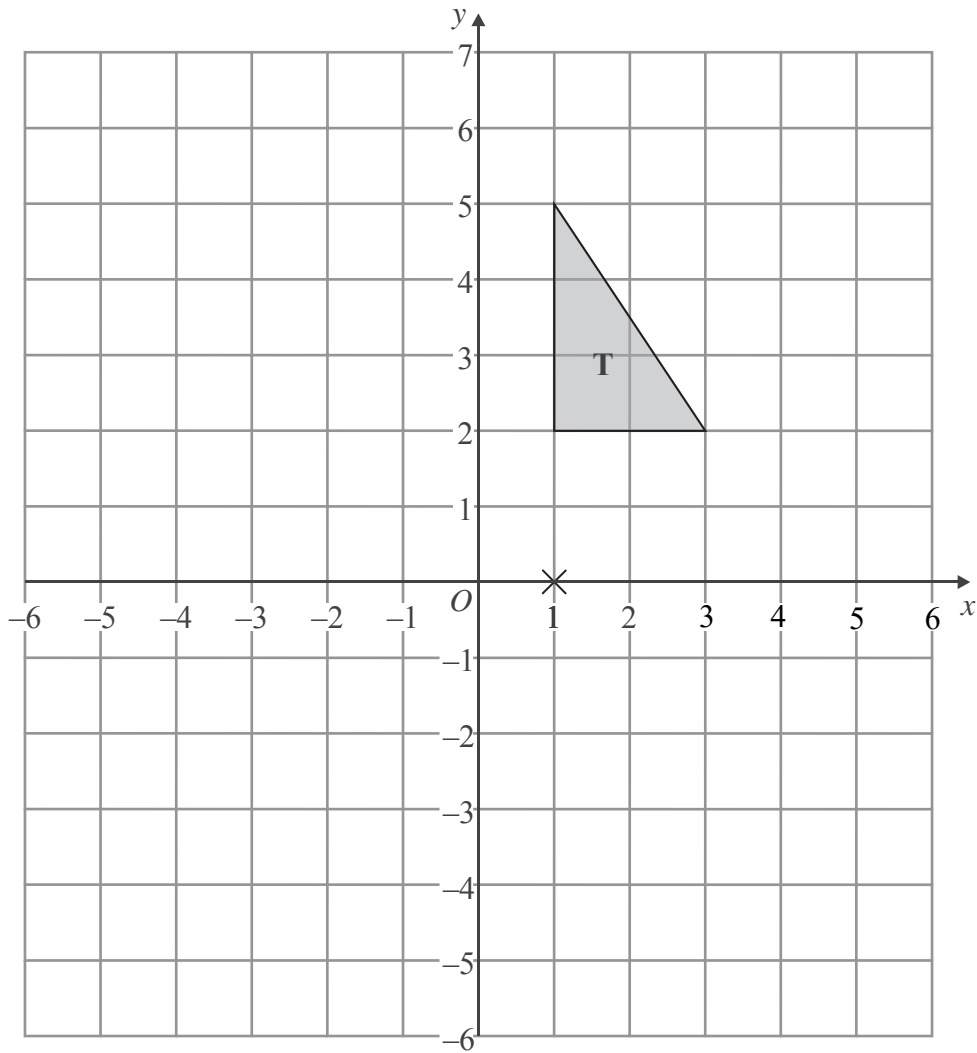
.....

(1)

(Total for Question 3 is 6 marks)



4



Triangle **T** has been drawn on the grid.

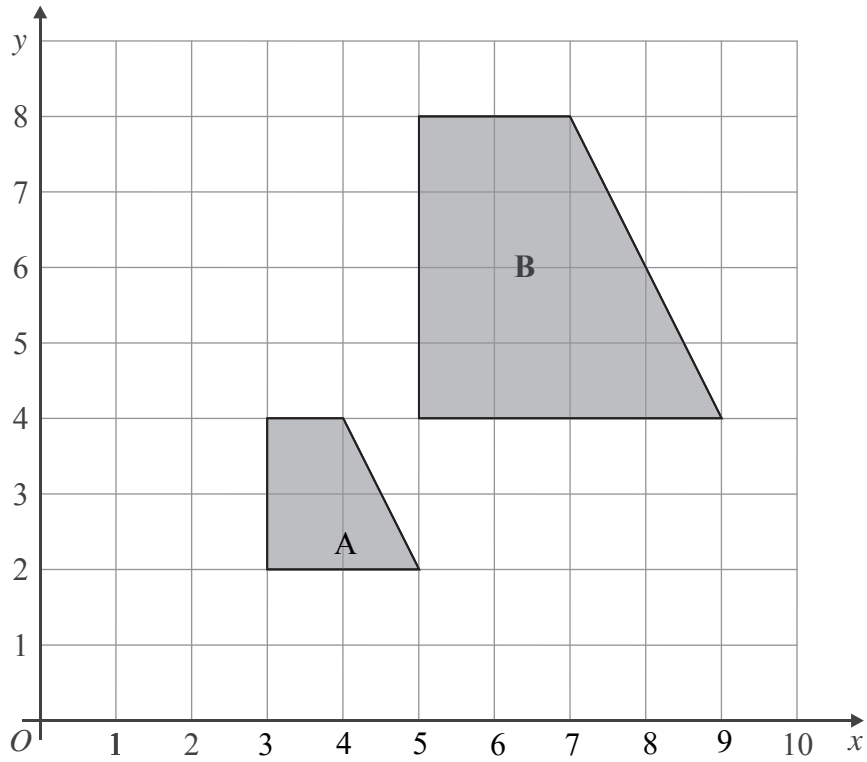
Rotate triangle **T** 90° clockwise about the point $(1, 0)$.

Label the new triangle **A**.

(Total for Question 4 is 2 marks)



5



Describe fully the single transformation which maps shape A onto shape B.

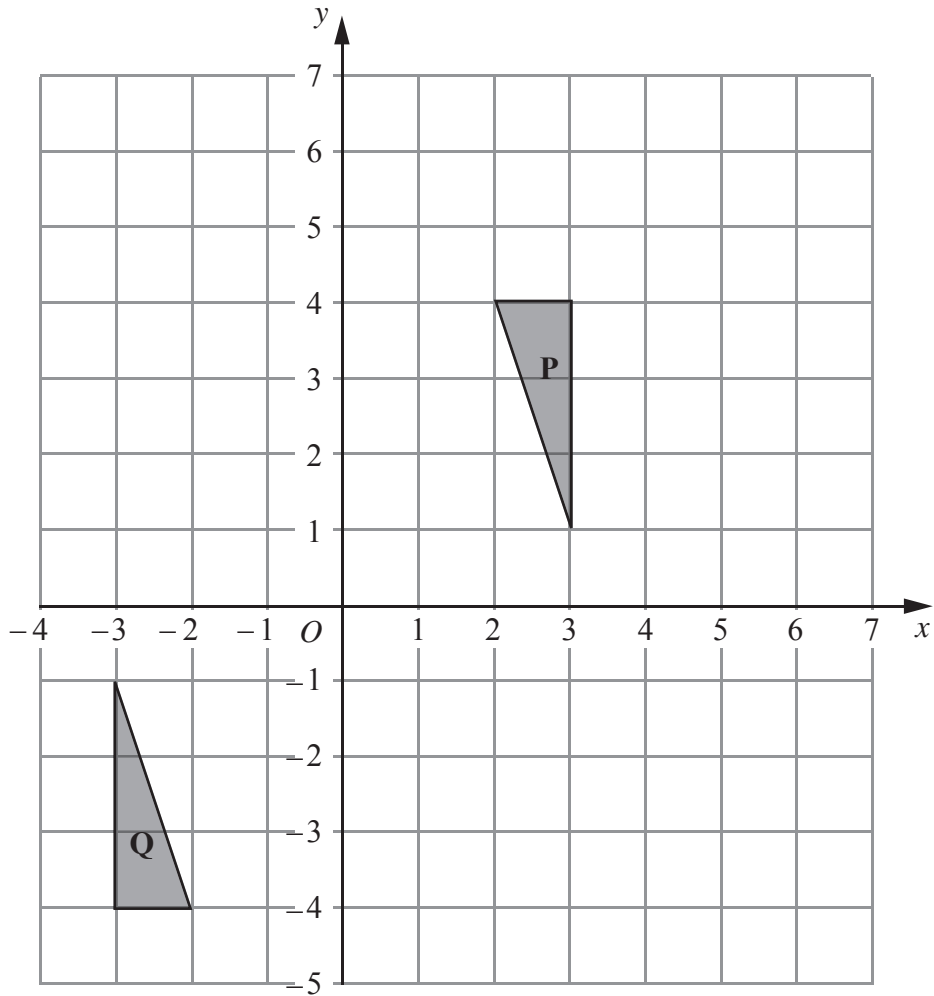
.....

.....

(Total for Question 5 is 3 marks)



6



Triangle **P** and triangle **Q** are drawn on the grid.

(a) Describe fully the single transformation which maps triangle **P** onto triangle **Q**.

.....
.....

(3)

(b) Translate triangle **P** by the vector $\begin{pmatrix} 3 \\ 0 \end{pmatrix}$.

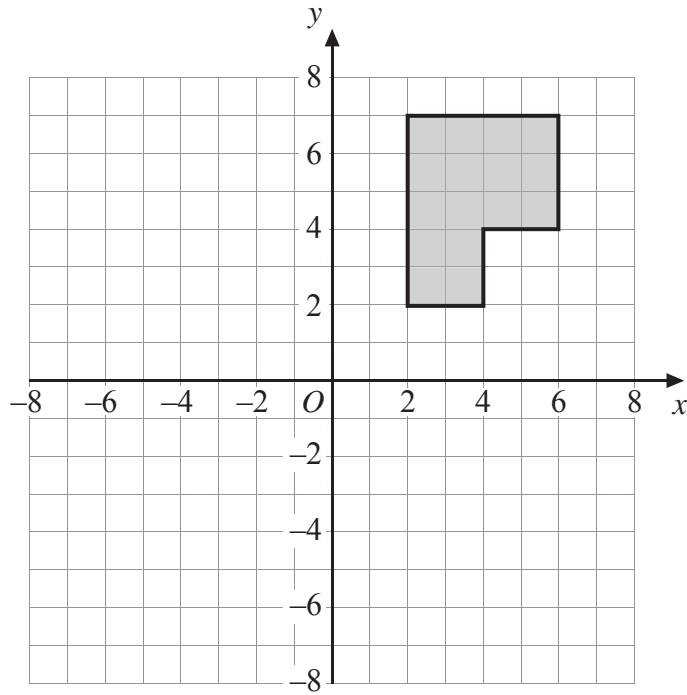
Label the new triangle **R**.

(1)

(Total for Question 6 is 4 marks)

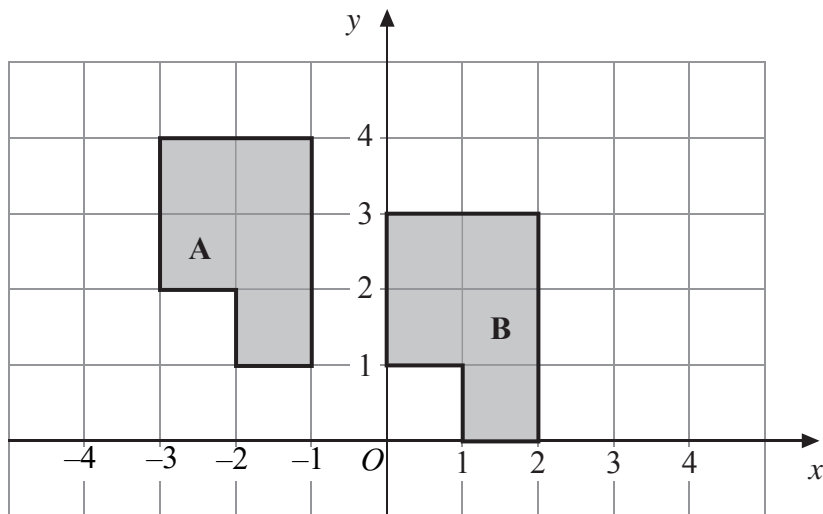


7



(a) Rotate the shaded shape 180° clockwise about the point O .

(2)

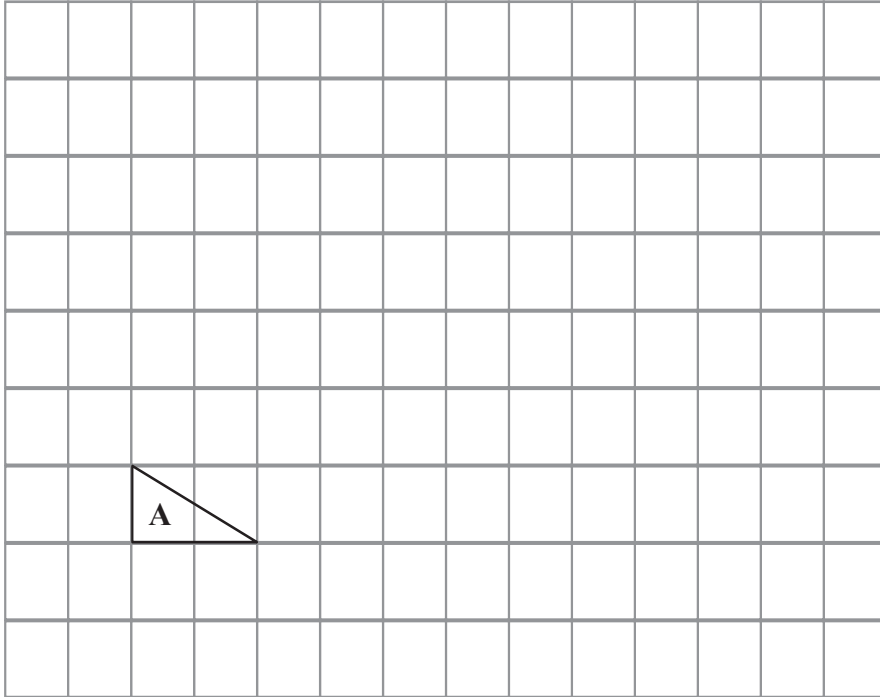


(b) Describe fully the single transformation that will map shape **A** onto shape **B**.

.....
(2)

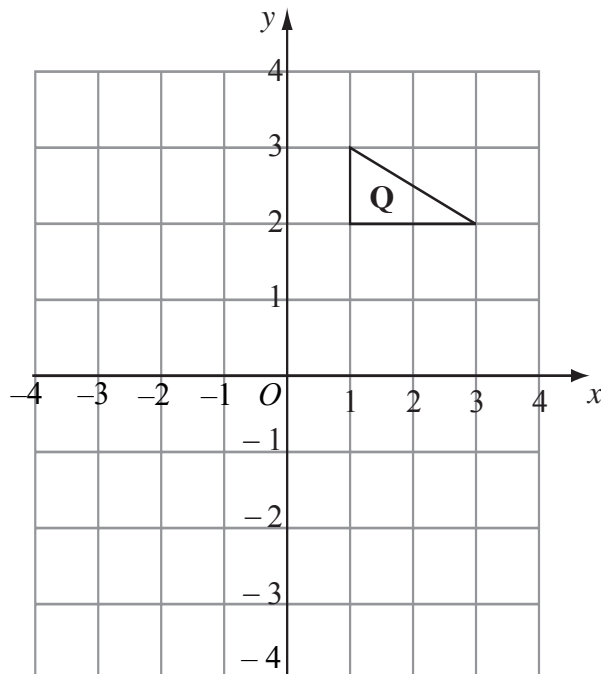
(Total for Question 7 is 4 marks)





Triangle **A** has been drawn on a grid.

- (a) On the grid, draw an enlargement of the triangle **A** with a scale factor 3.

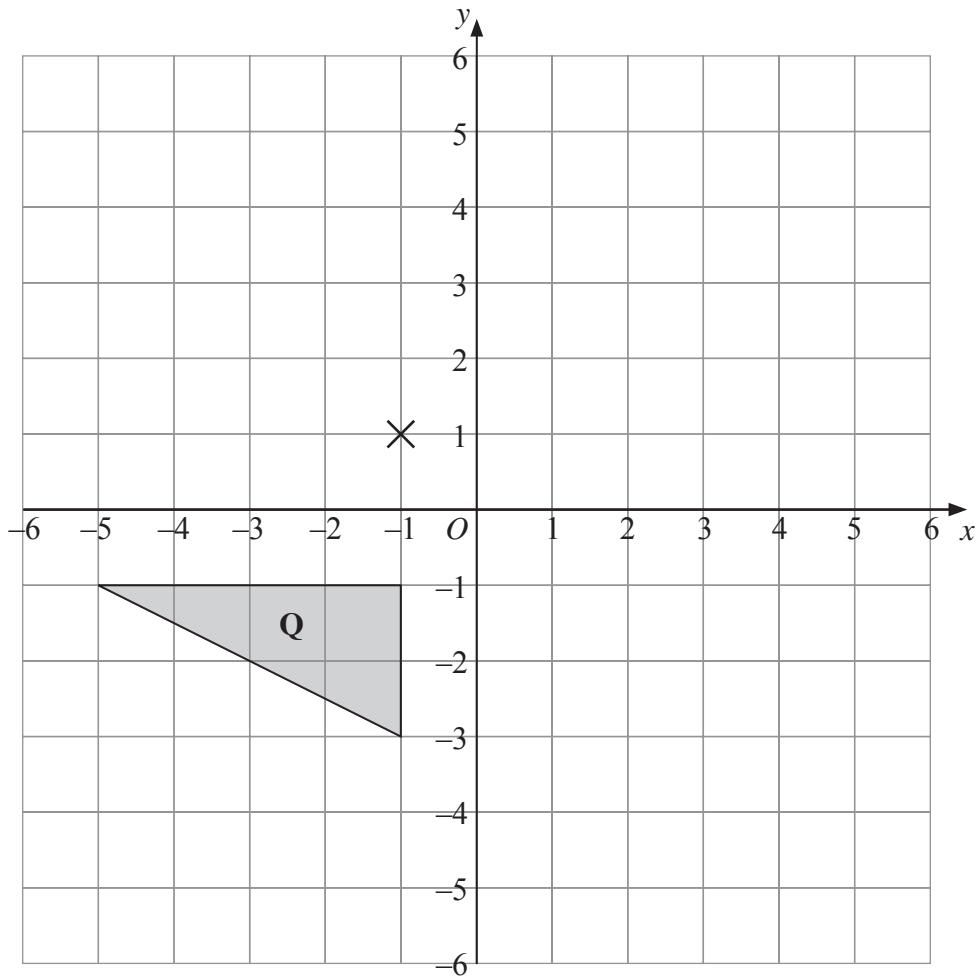


Triangle **Q** has been drawn on a grid.

- (b) On the grid, rotate triangle **Q** 90° clockwise, centre O .



9



(a) Rotate triangle **Q** 180° about the point $(-1, 1)$.

Label the new triangle **A**.

(2)

(b) Translate triangle **Q** by the vector $\begin{pmatrix} 6 \\ -1 \end{pmatrix}$.

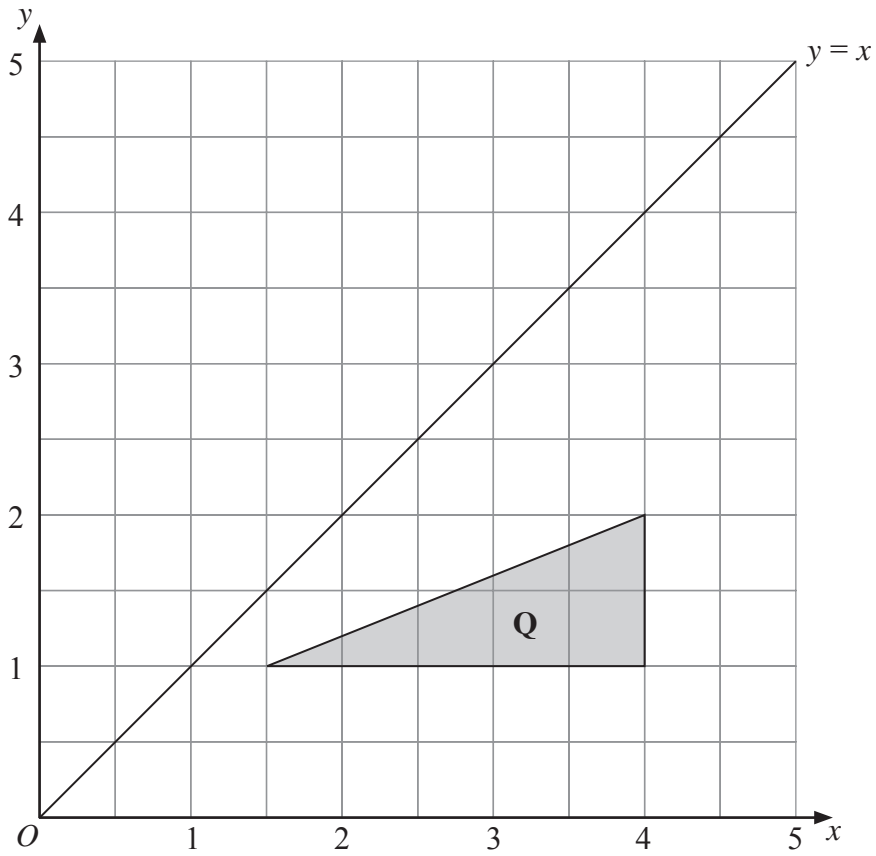
Label the new triangle **B**.

(1)

(Total for Question 9 is 3 marks)



10



(c) Reflect triangle **Q** in the line $y = x$.

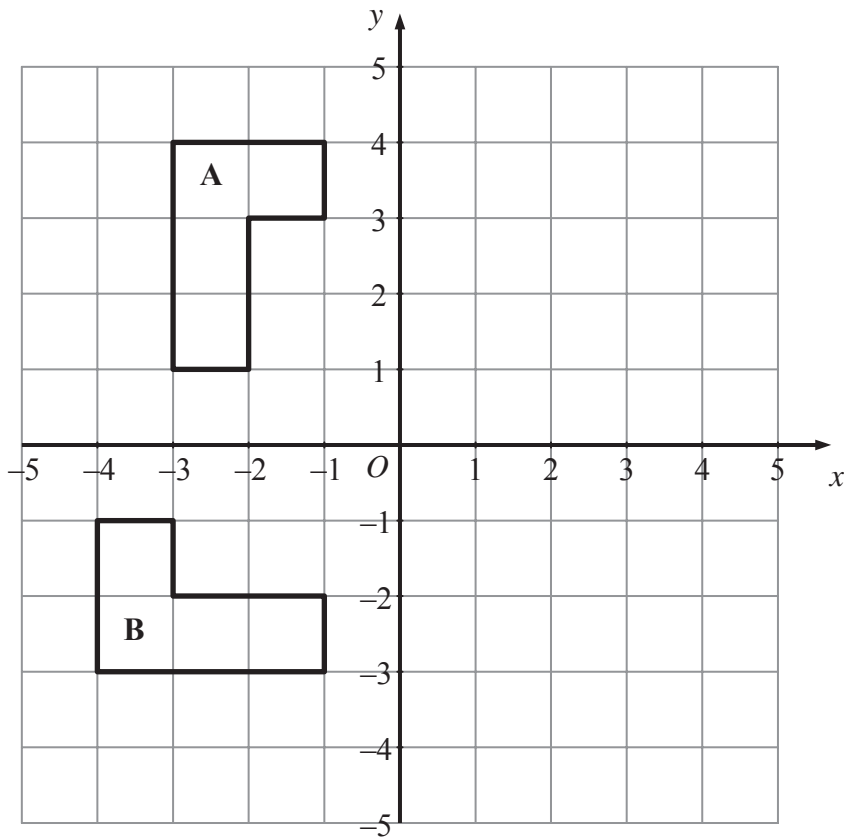
Label the new triangle **C**.

(5)

(Total for Question 10 is 5 marks)



11



(a) Reflect shape A in the y axis.

(2)

(b) Describe fully the **single** transformation which takes shape A to shape B.

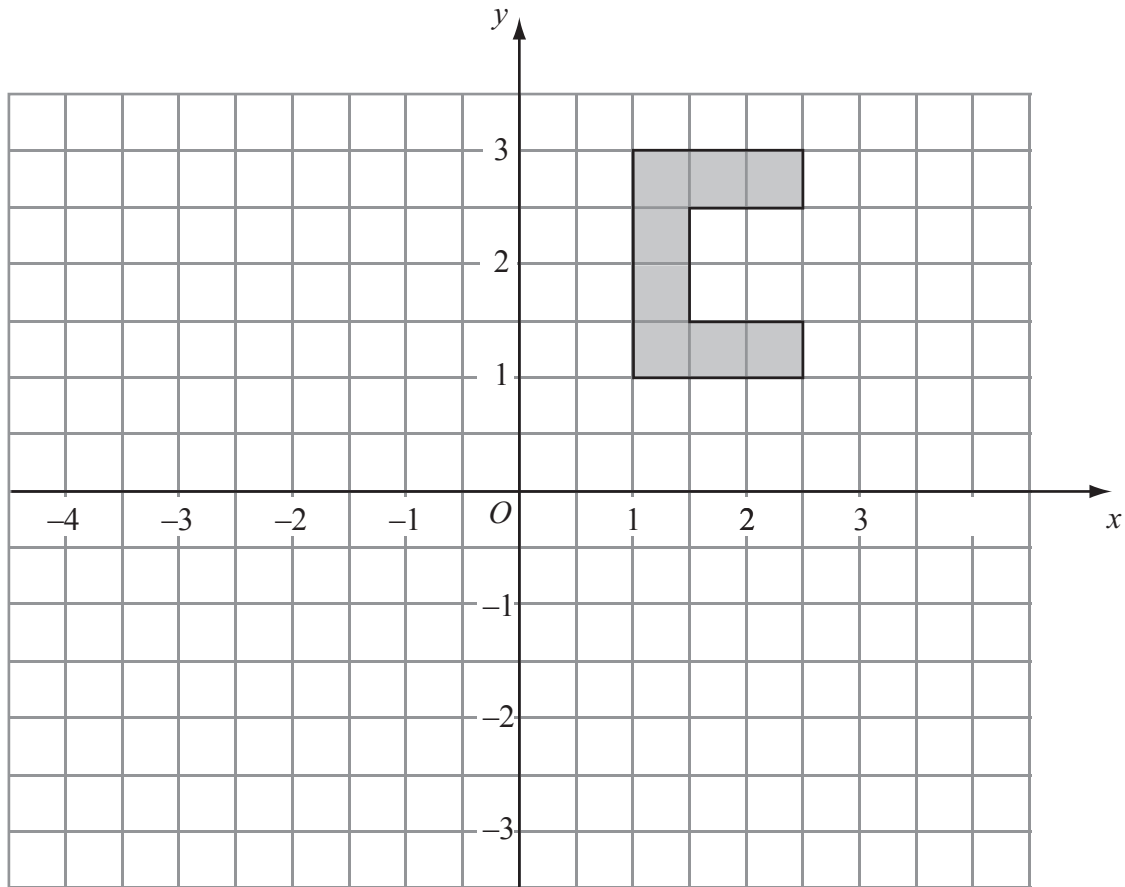
.....

(3)

(Total for Question 11 is 5 marks)



12

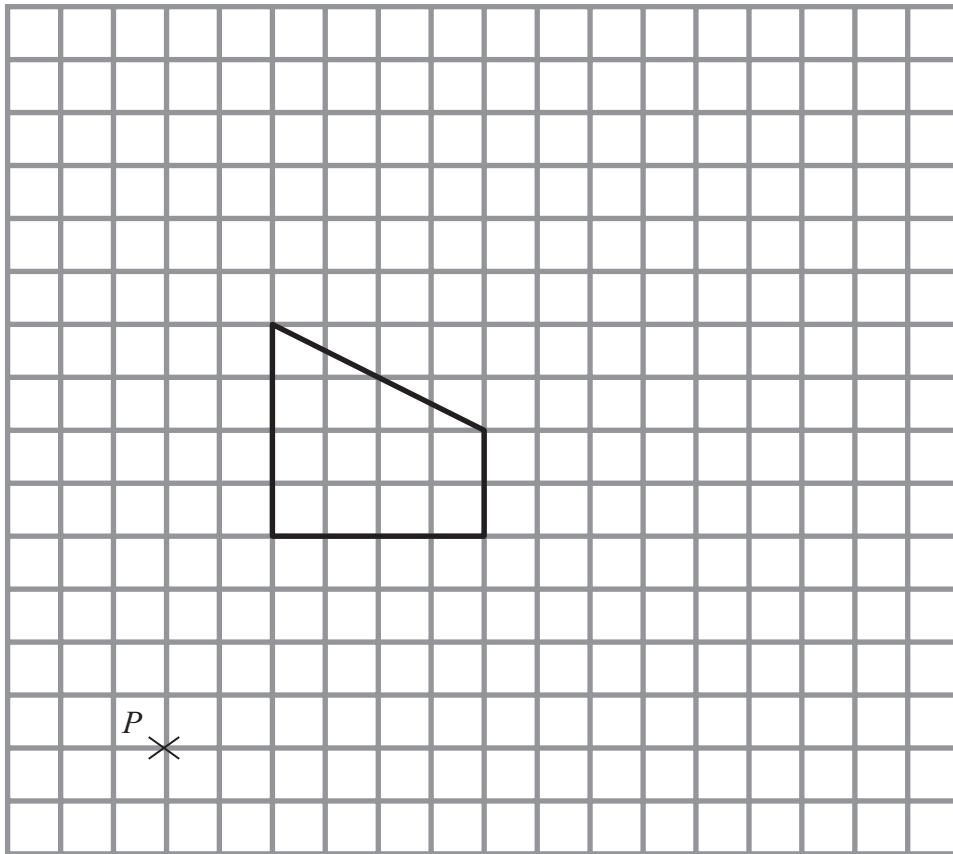


Rotate the shape 180° centre O .

(Total for Question 12 is 2 marks)



13

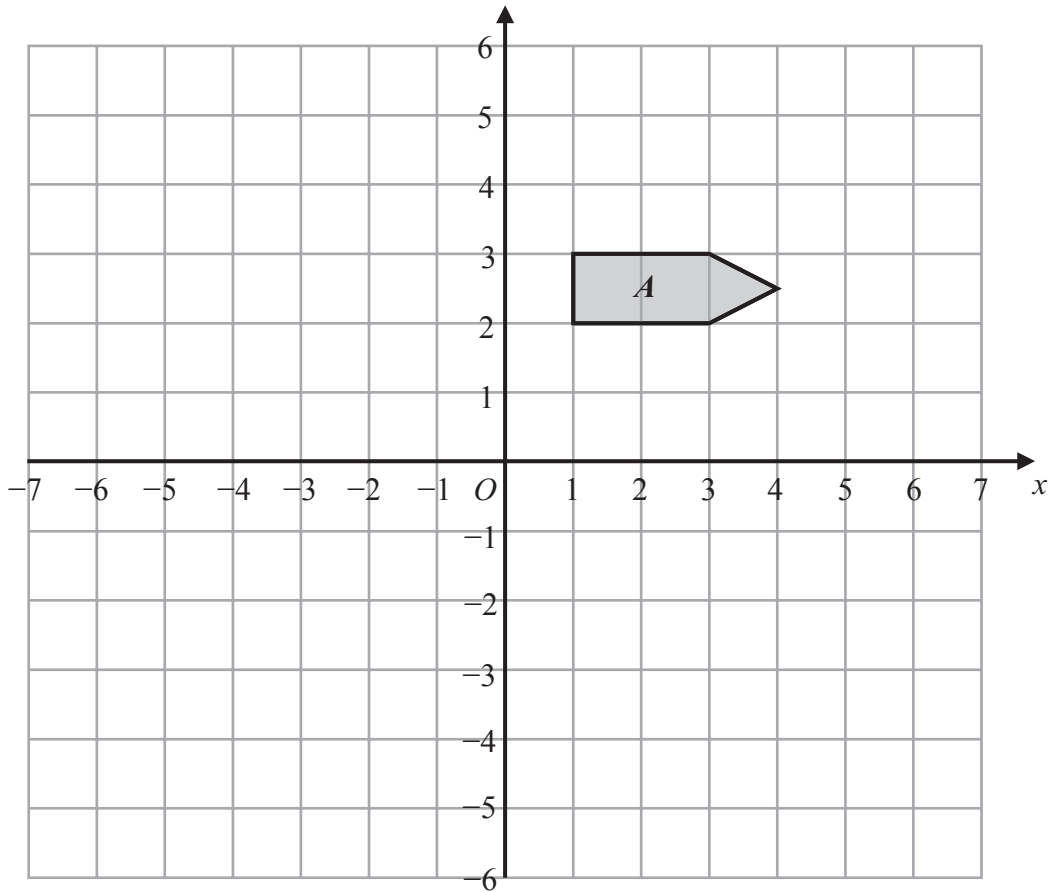


On the grid, enlarge the shape with a scale factor of $\frac{1}{2}$, centre P .

(Total for Question 13 is 3 marks)

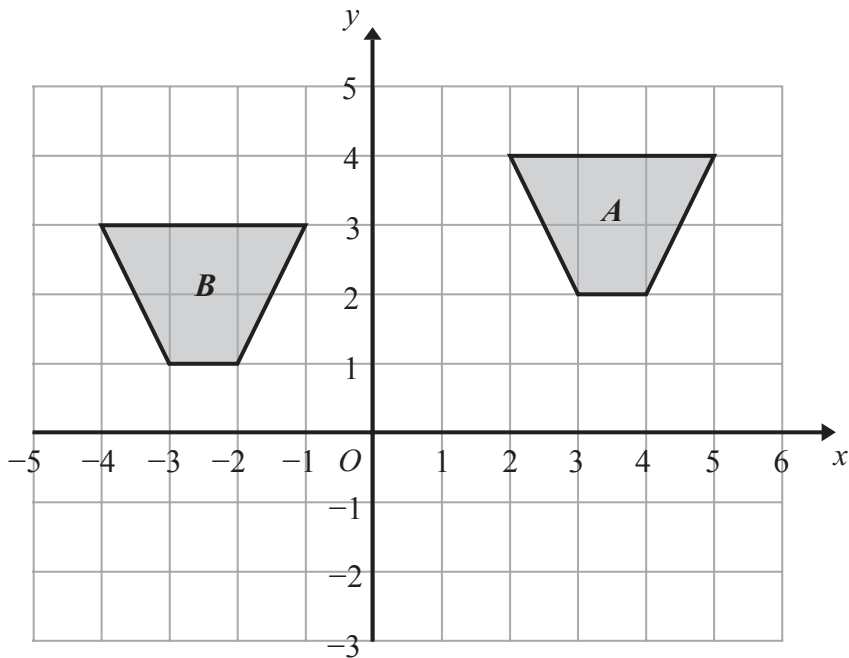


14



(a) On the grid above, reflect shape *A* in the line $x = -2$

(2)



(b) Describe fully the single transformation that will map shape *A* onto shape *B*.

.....
.....

(2)

