

Write your name here

Surname

Other names

In the style of:

**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics A

## Transformations

**Foundation Tier**

Past Paper 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. Tracing paper may be used.

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 must not be used.**

### Information

- The total mark for this paper is 100
- 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.

### Advice

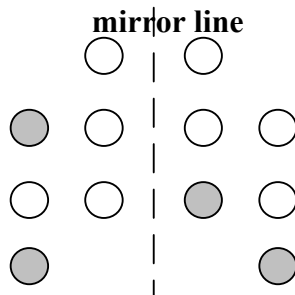
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►



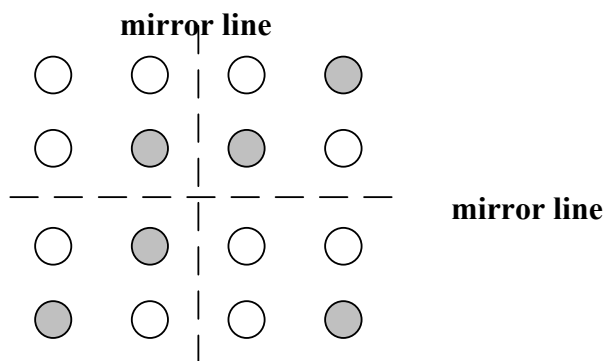
1. Here are some patterns of circles.

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



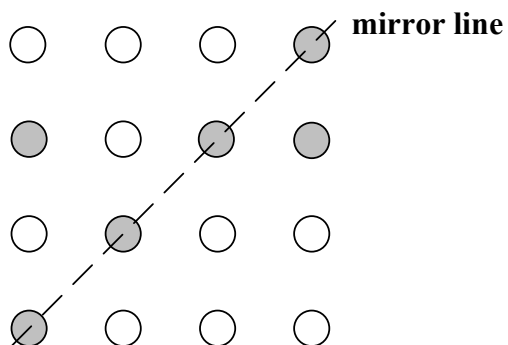
(2)

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



(2)

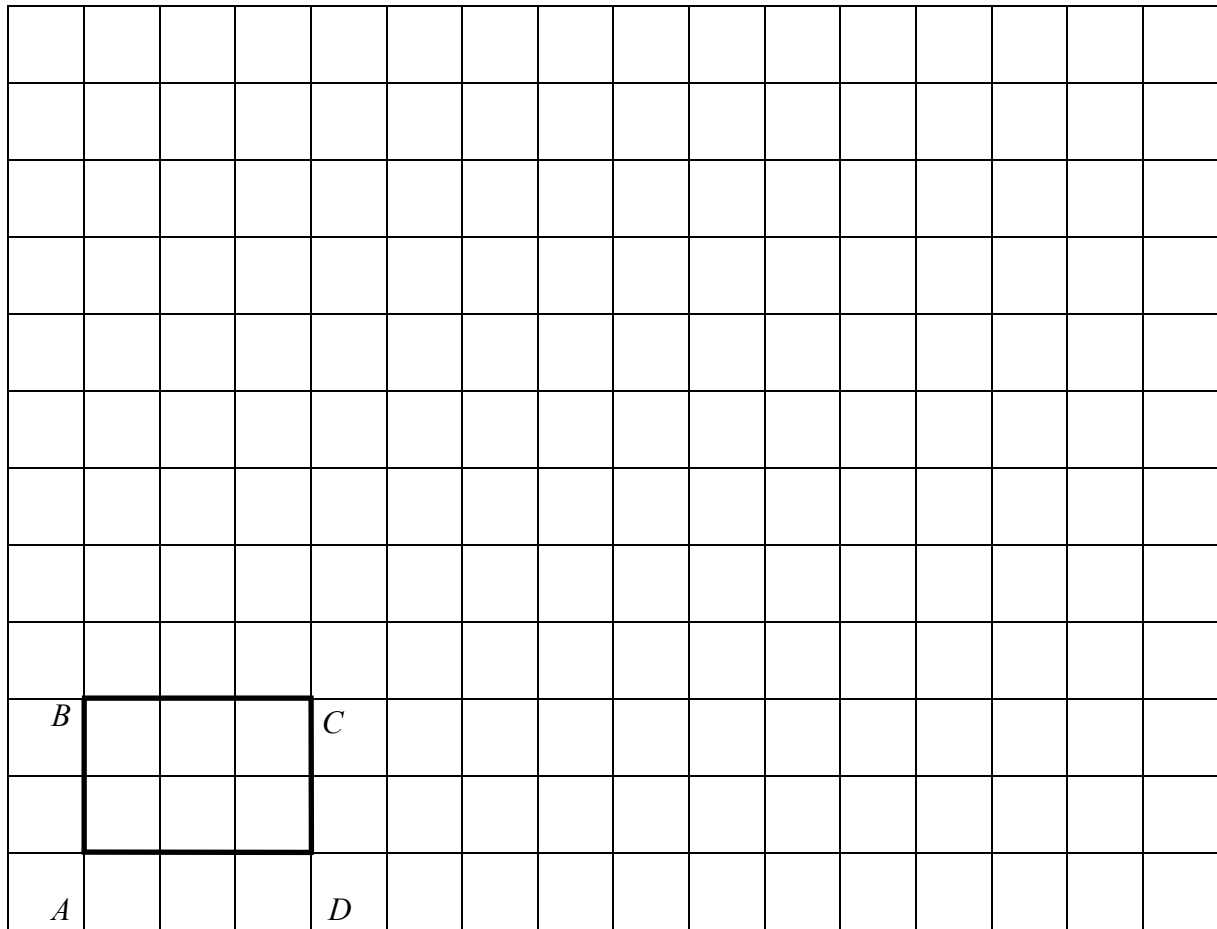
(c) Shade **four** more circles to give this pattern symmetry in the mirror line.



(2)



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  $ABCD$ ?

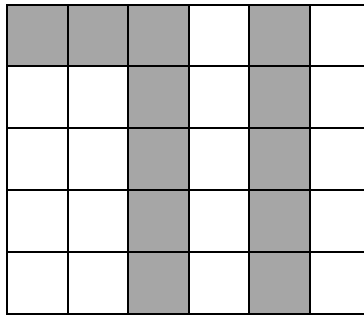
.....

(2)



3.

The number 71 is shaded on the grid.



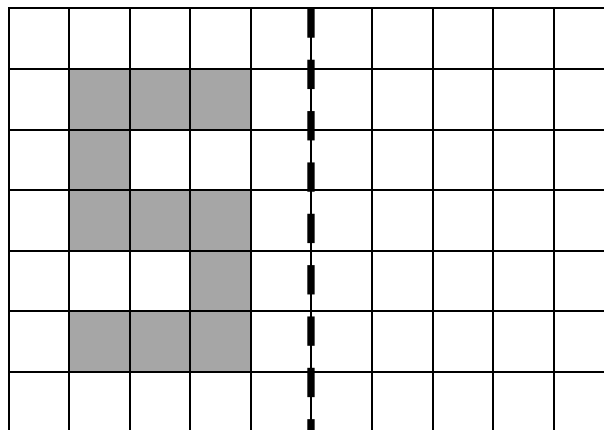
(a) What fraction of the grid is shaded?

Give your answer in its simplest form.

.....

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

(3)



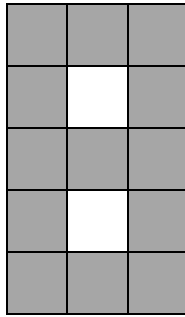
mirror line

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

(2)



3. (c) The number eight is drawn.



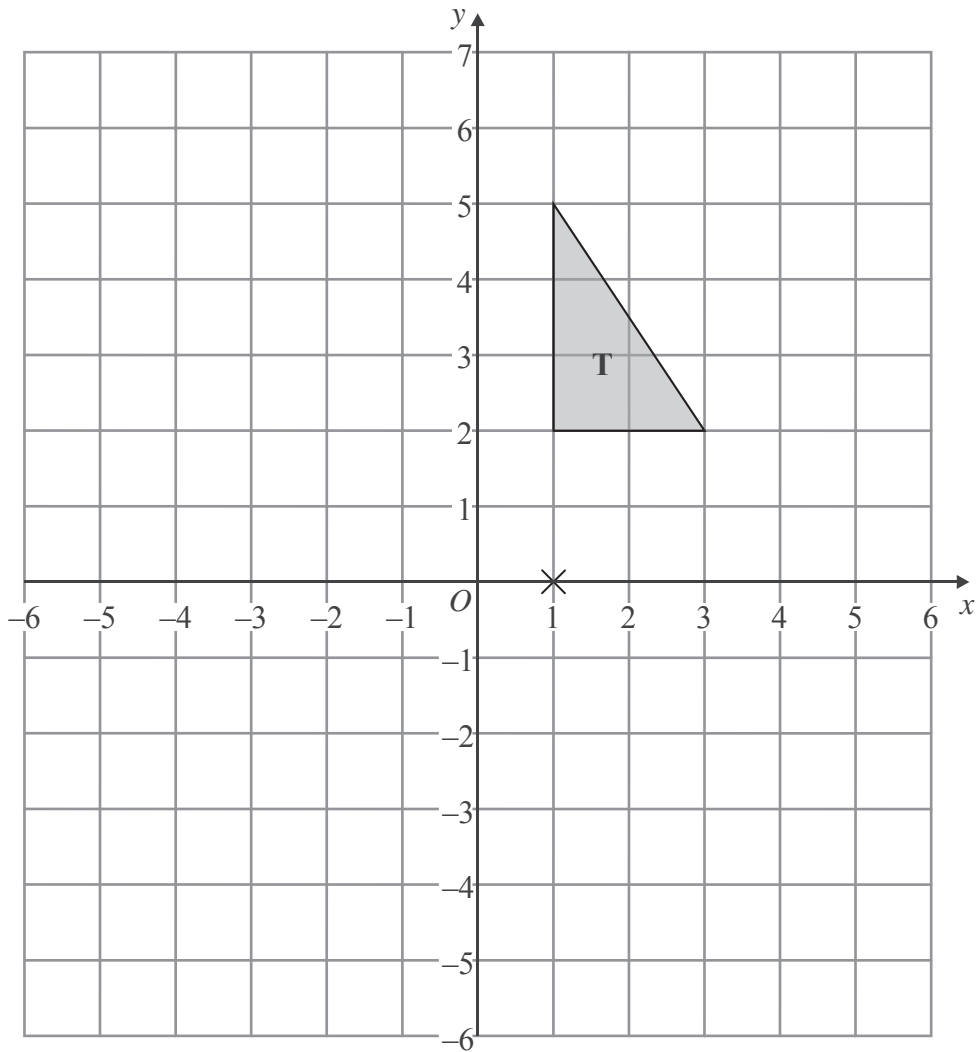
Write down the order of rotational symmetry.

.....

**(1)**



4.



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

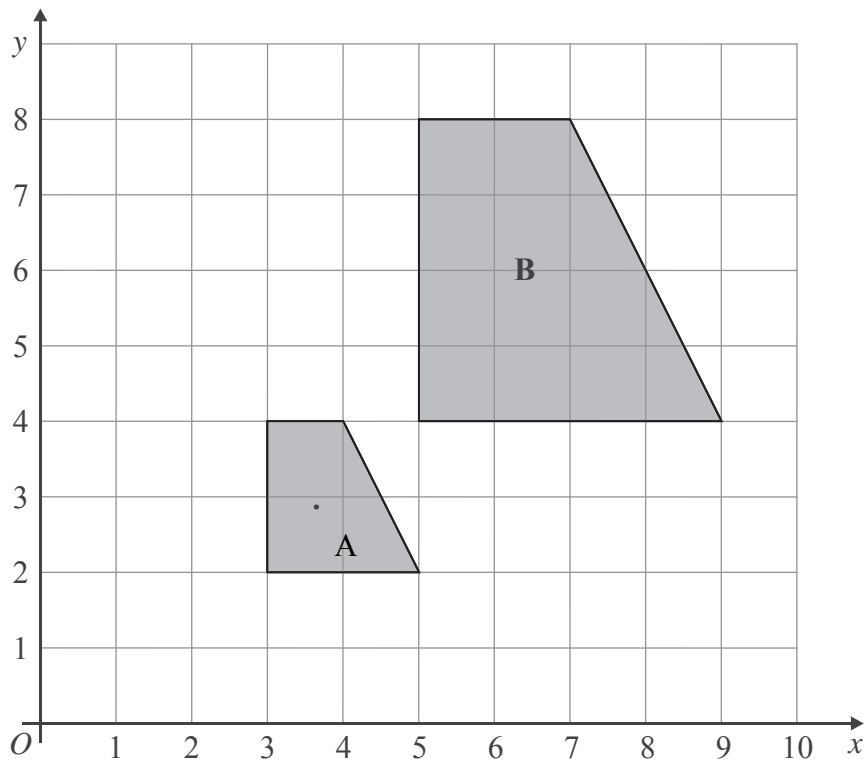
Rotate triangle **T**  $90^\circ$  about the point (1, 0).

Label the new triangle **A**.

**(Total 2 marks)**



5.



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

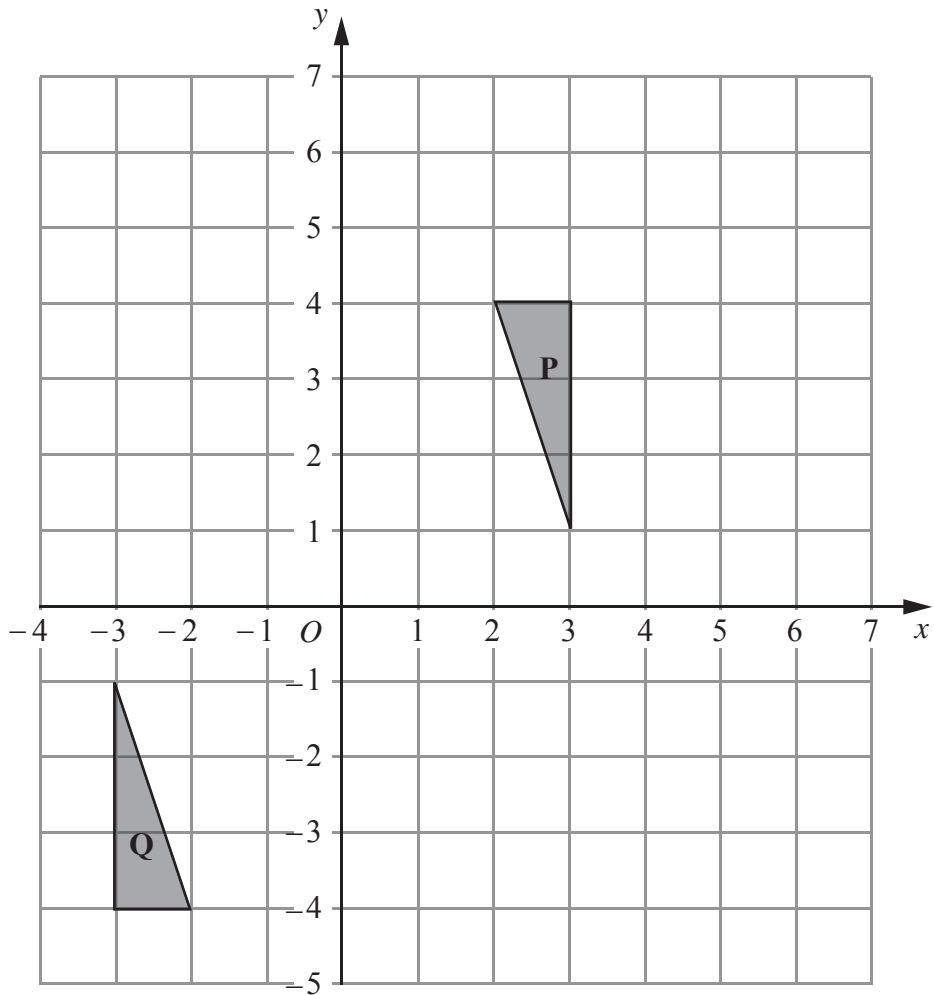
.....

.....

**(Total 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**.

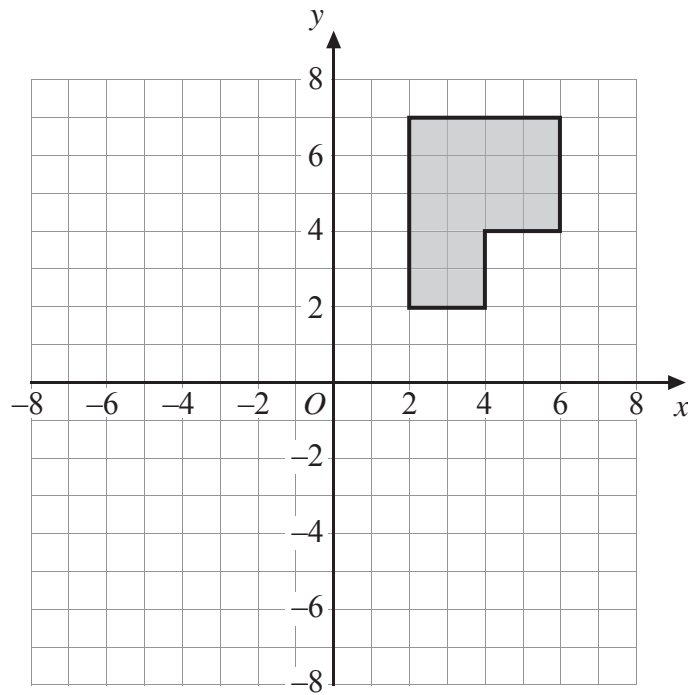
**(1)**

**(Total 4 marks)**



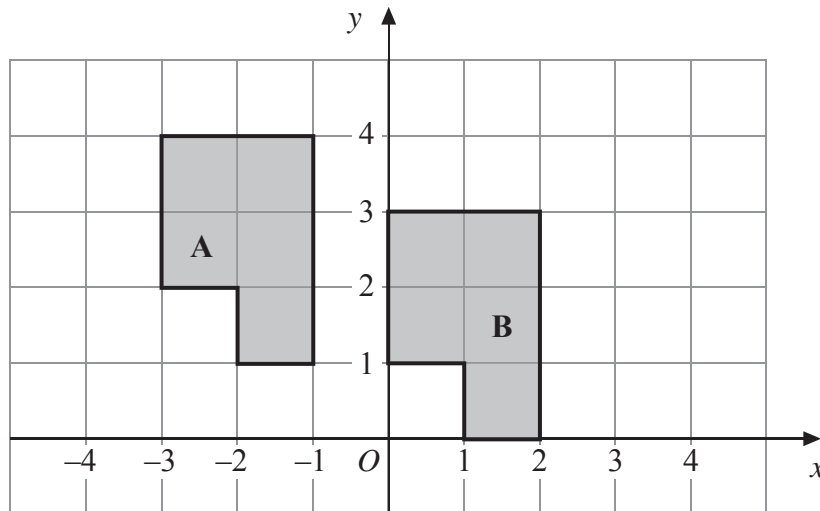


7.



(a) Rotate the shaded shape  $180^\circ$  clockwise about the point  $O$ .

(2)



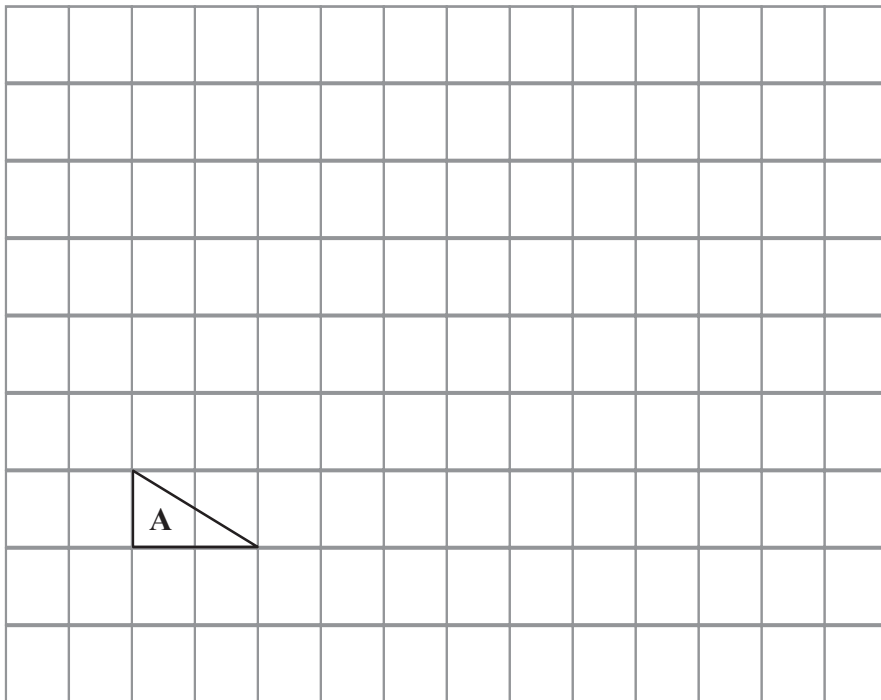
(b) Describe fully the single transformation that will map shape **A** onto shape **B**.

.....  
(2)

(Total 4 marks)

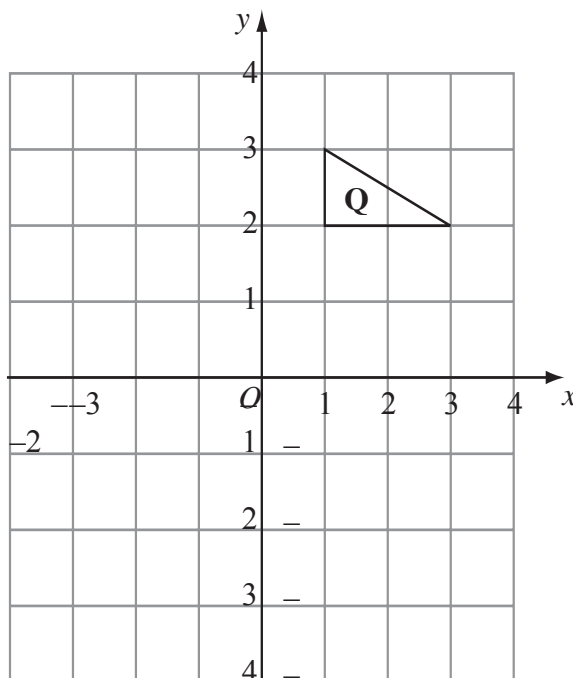


8.



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

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

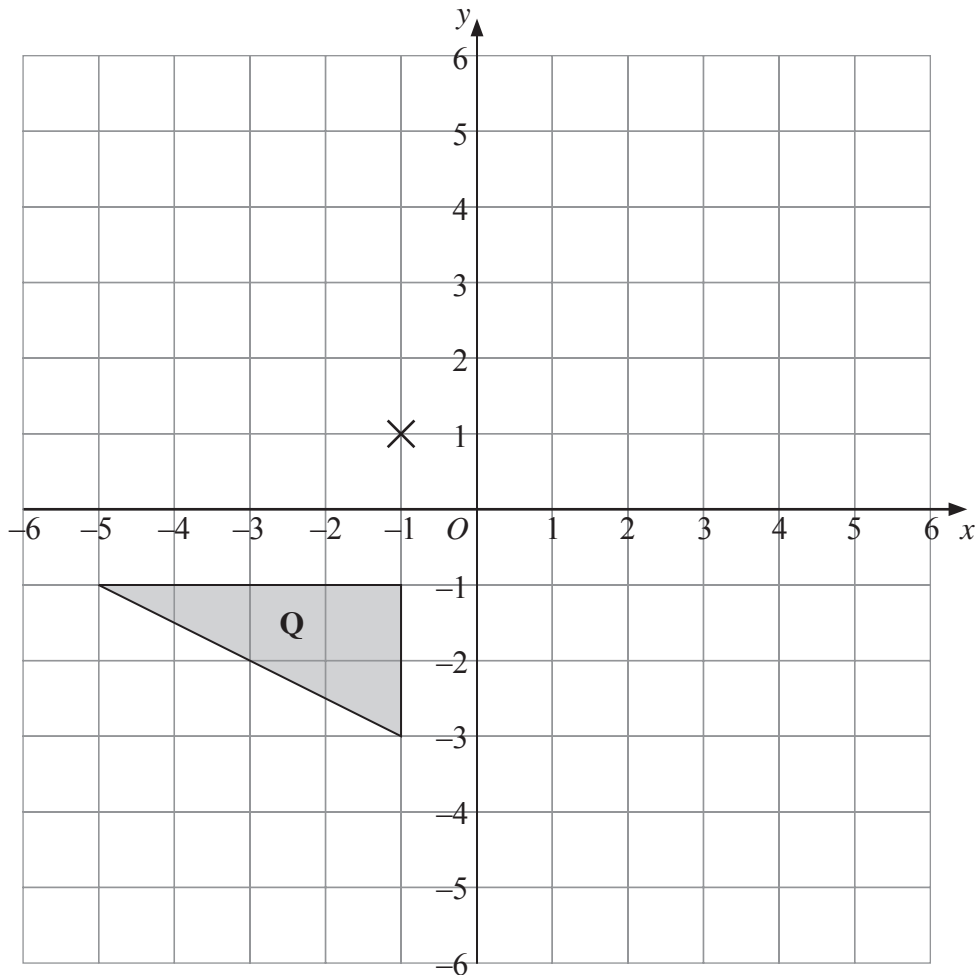


Triangle **Q** has been drawn on a grid.

- (b) On the grid, rotate triangle **Q**  $90^\circ$  clockwise, centre  $O$ .



9.



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

Label the new triangle **A**.

(2)

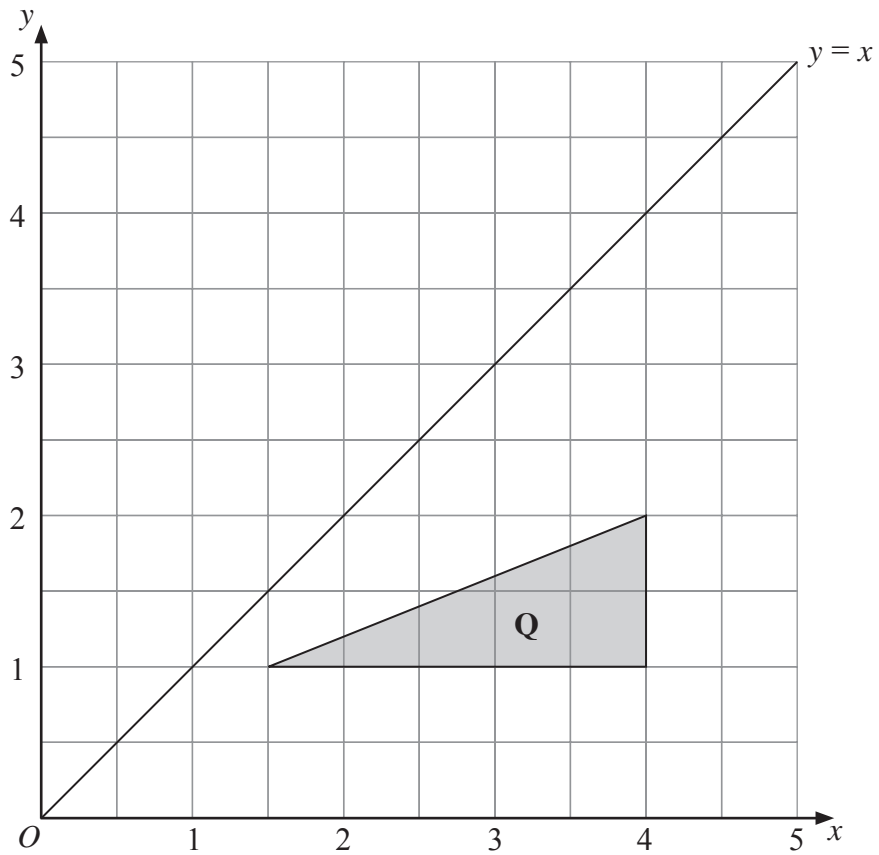
(b) Translate triangle **Q** by the vector  $\begin{pmatrix} 6 \\ -1 \end{pmatrix}$ .

Label the new triangle **B**.

(1)



10.



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

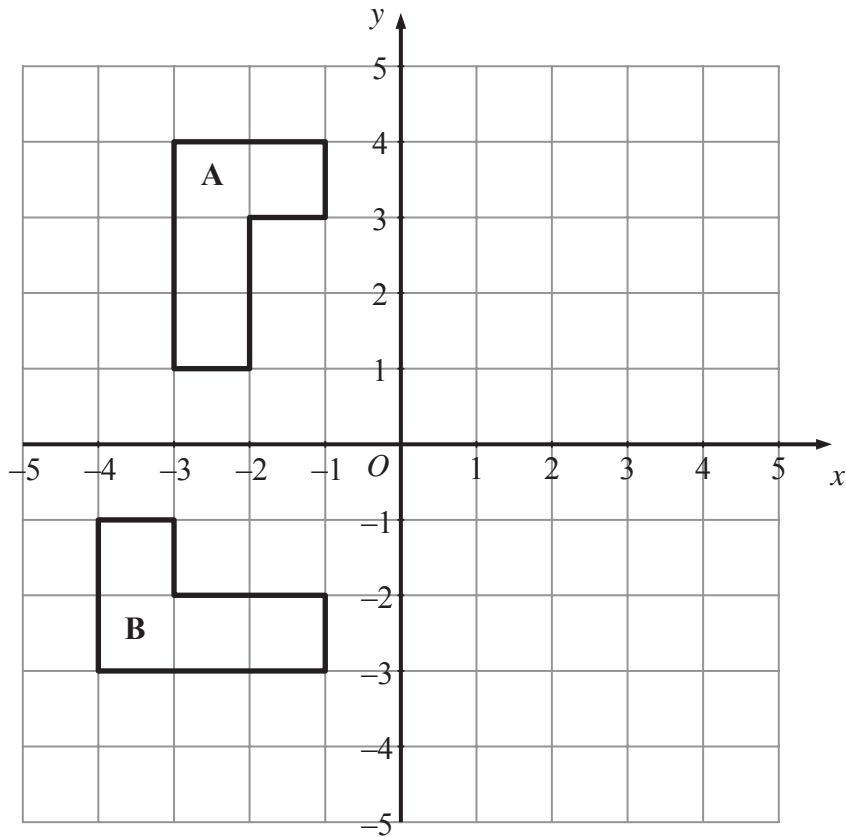
Label the new triangle **C**.

(2)

(Total 5 marks)



11.



(a) Reflect shape A in the y axis.

(2)

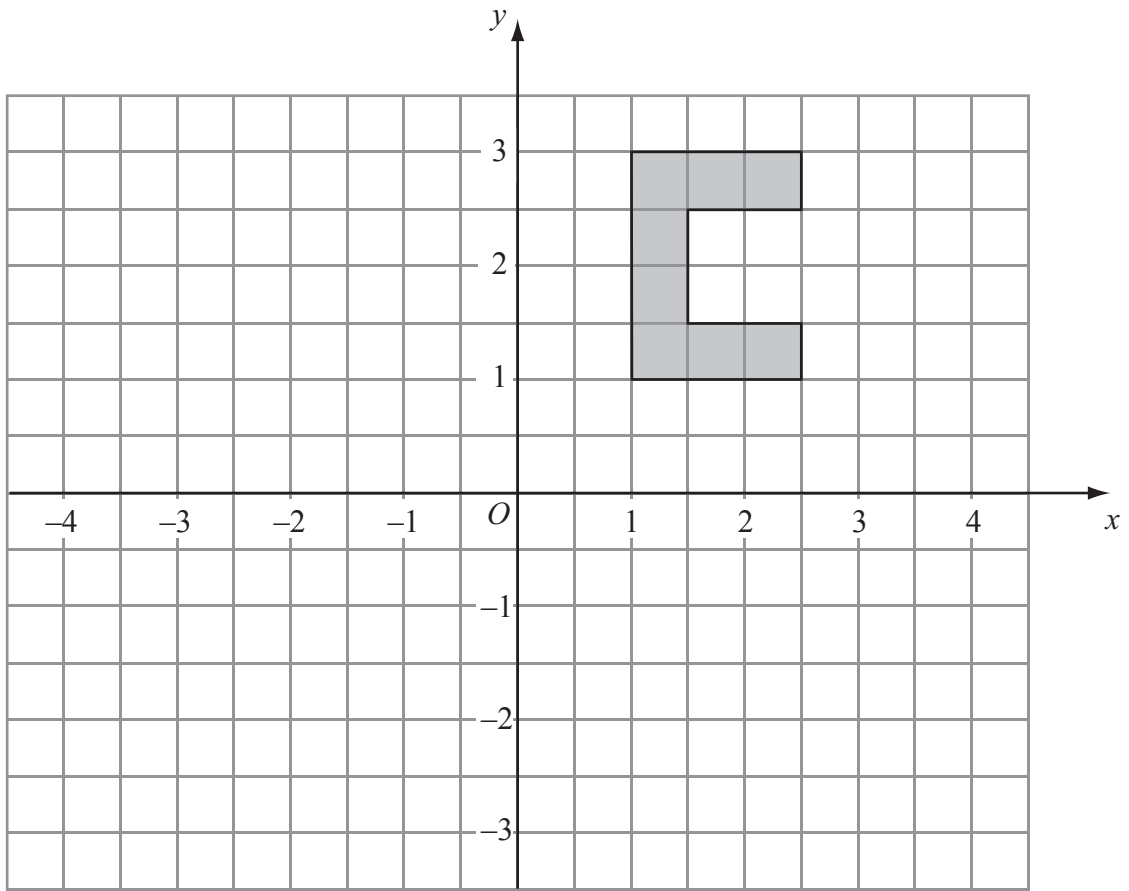
(b) Describe fully the **single** transformation which takes shape A to shape B.

.....  
(3)

(Total 5 marks)



12.

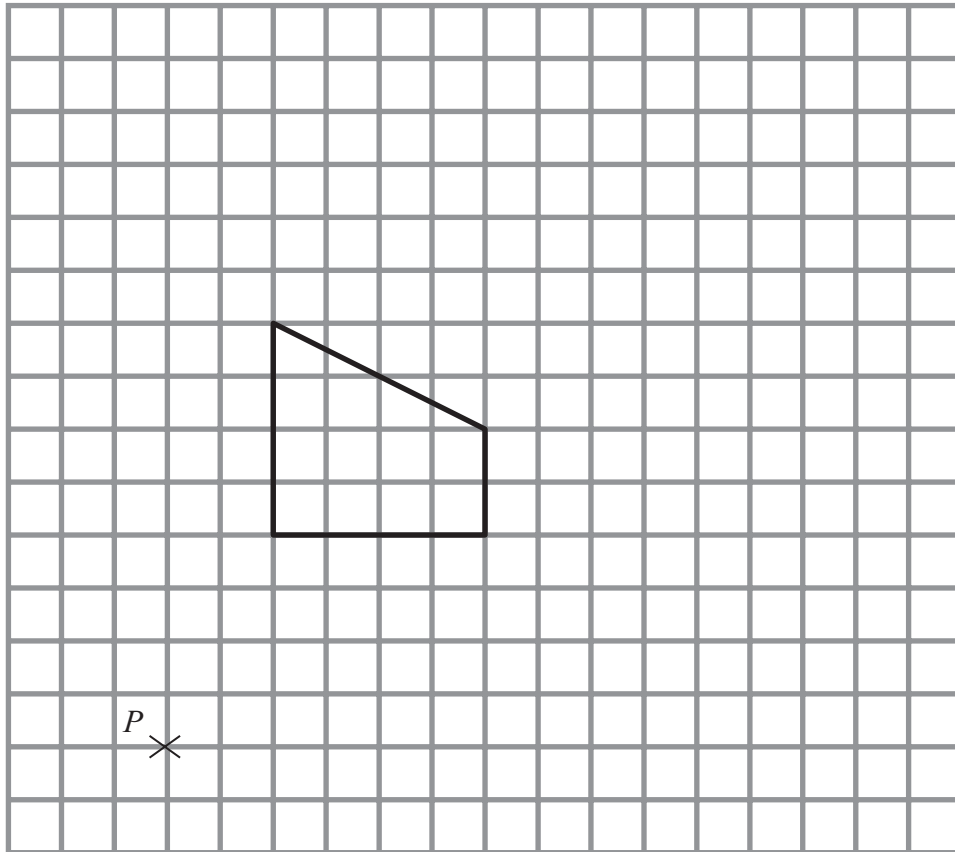


Rotate the shape  $180^\circ$  centre  $O$ .

(Total 2 marks)



13.

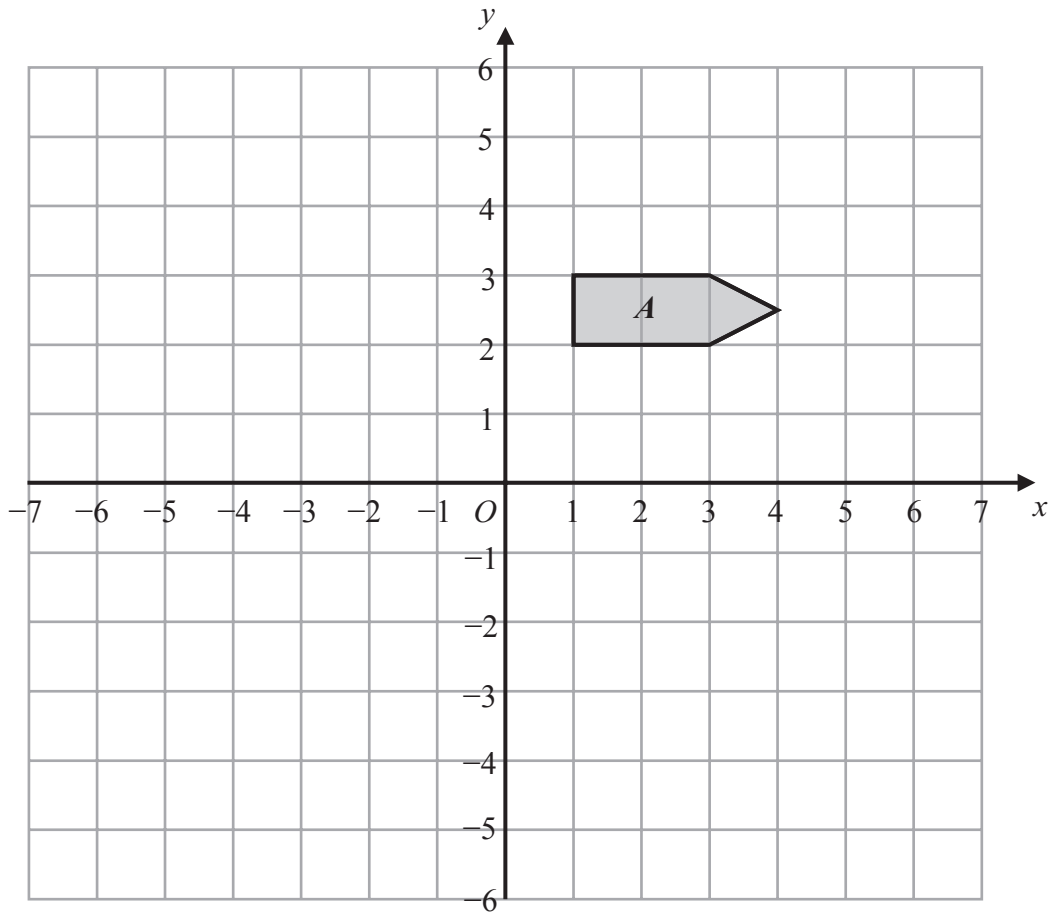


On the grid, enlarge the shape with a scale factor of  $\frac{1}{2}$ , centre  $P$ .

**(Total 3 marks)**

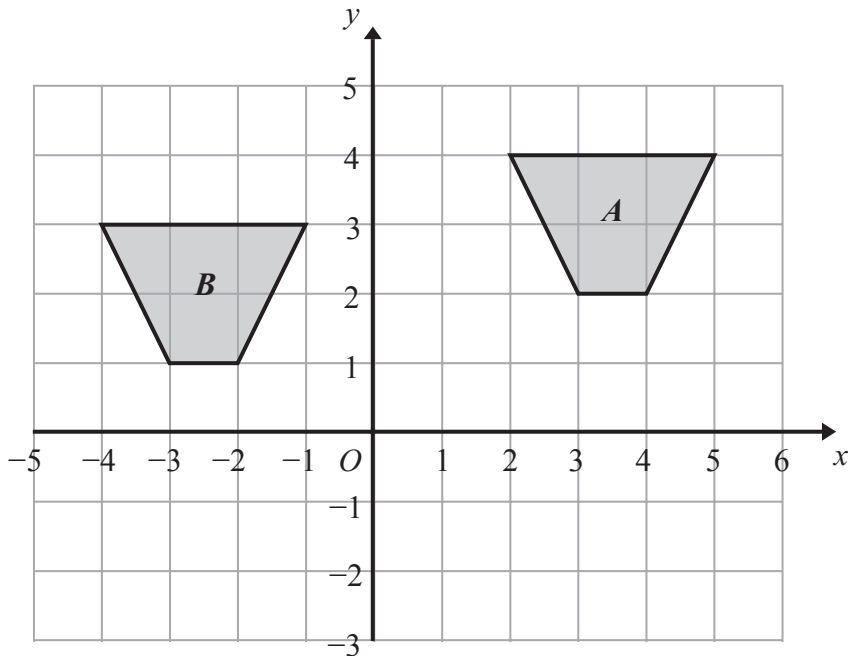


14.



(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)

(Total 4 marks)

