Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
TOTAL	

mathsrevision revisionworld

GCSE
Mathematics (Non-calculator Paper)

Practice Paper Style Questions
Topic: Transformations (Foundation Tier)

For this paper you must have:	

- black pen
- HB pencil
- ruler (with cm & mm)
- rubber
- protractor
- compass
- pencil sharpener

Time allowed
- 1 hour

Instructions
- Use **black ink** or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is **52**.
  The quality of your written communication is specifically assessed in questions indicated with an asterisk (*)
- You may ask for more answer paper and graph paper.
  These must be tagged securely to this answer booklet.
- A calculator must NOT be used.

Advice
- Read each question carefully before you answer it.
- In all calculations, show clearly how you work out your answer.
- Check your answers if you have time at the end.

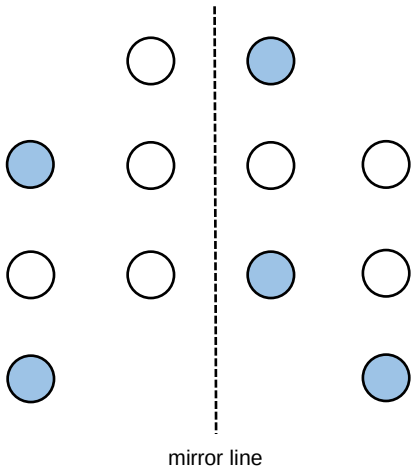
There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED

Do not write outside the box

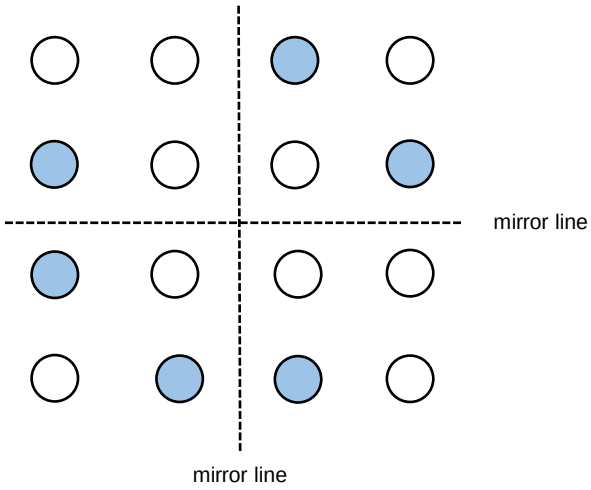
1 Here are some patterns made from circles:

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



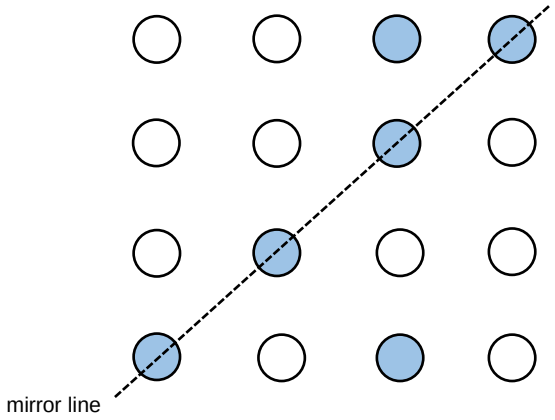
(2 marks)

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



(2 marks)

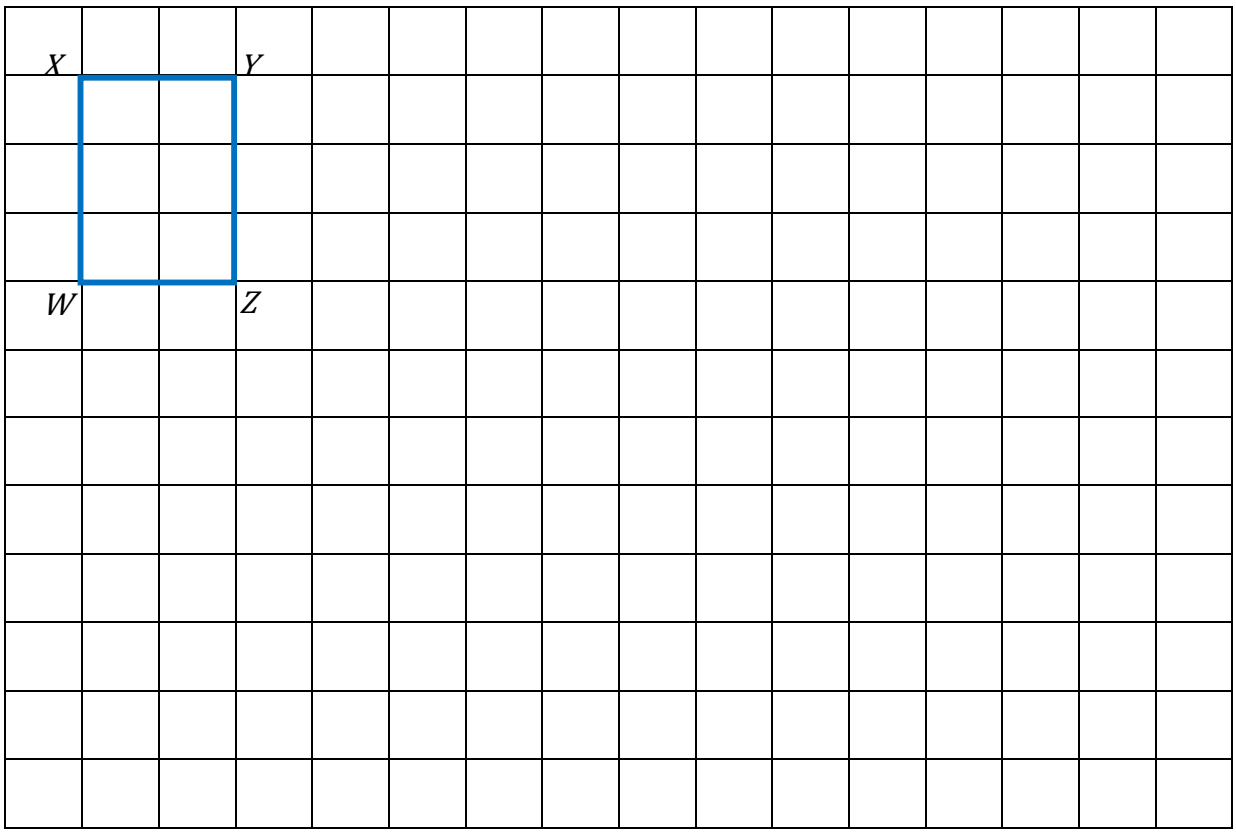
(c) Shade **four** more circles to give this pattern symmetry in the mirror line.



(2 marks)

6

2 The shape $WXYZ$ is drawn on a grid:



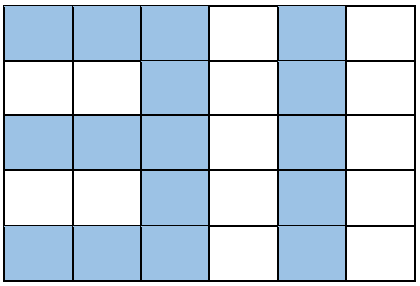
(a) Enlarge $WXYZ$ by scale factor 3 and draw the enlargement on the grid.

(2 marks)

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

Answer ..... *(2 marks)*

3 The number 31 is shaded on the grid:

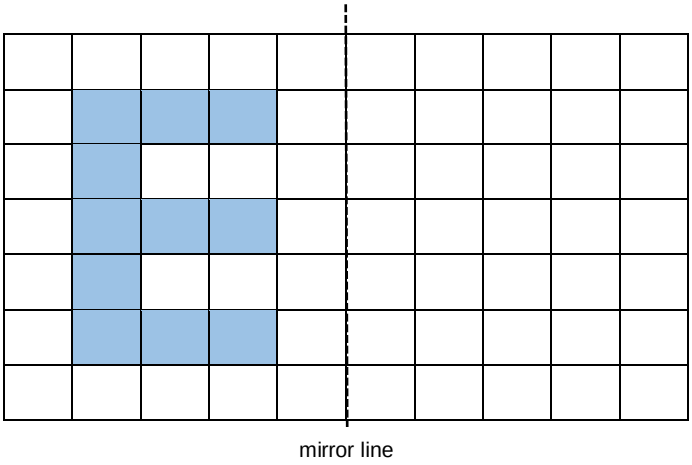


(a) What fraction of the grid is shaded?

Give your answer in its simplest form.

Answer ..... *(3 marks)*

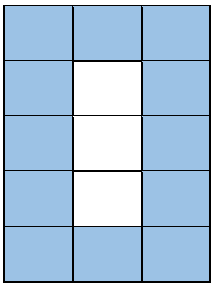
(b) The letter E is shaded on this grid:



On the grid draw the reflection of the letter E in the mirror line.

(2 marks)

(c) The number zero is drawn on a grid:

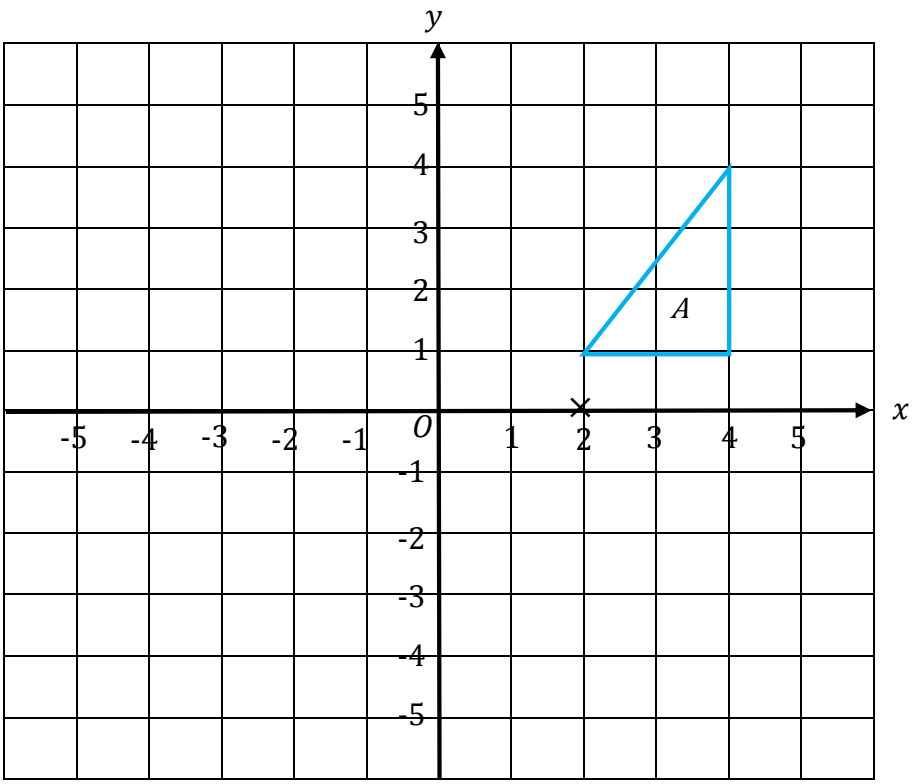


Write down the order of rotational symmetry.

Answer ..... *(1 mark)*

10

4 Triangle A has been drawn on the grid:

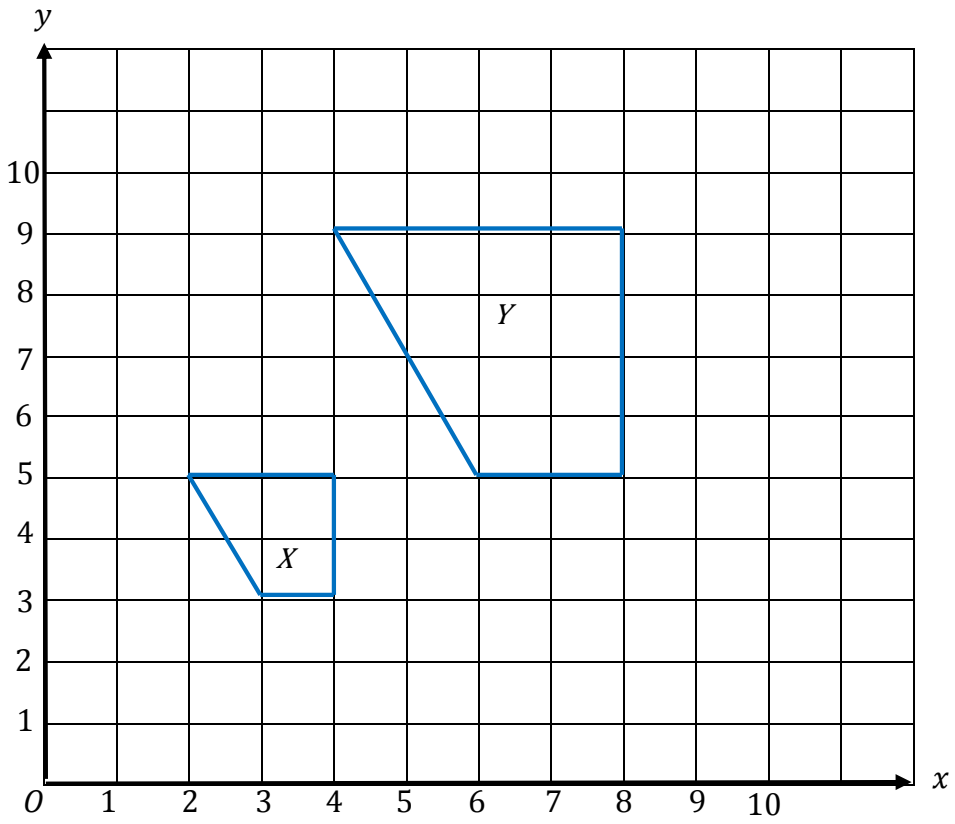


Rotate Triangle A 90° clockwise about the point (2, 0) and draw it in its new position.

Label the new triangle N.

(2 marks)

5



Describe fully the single transformation which maps shape X onto shape Y.

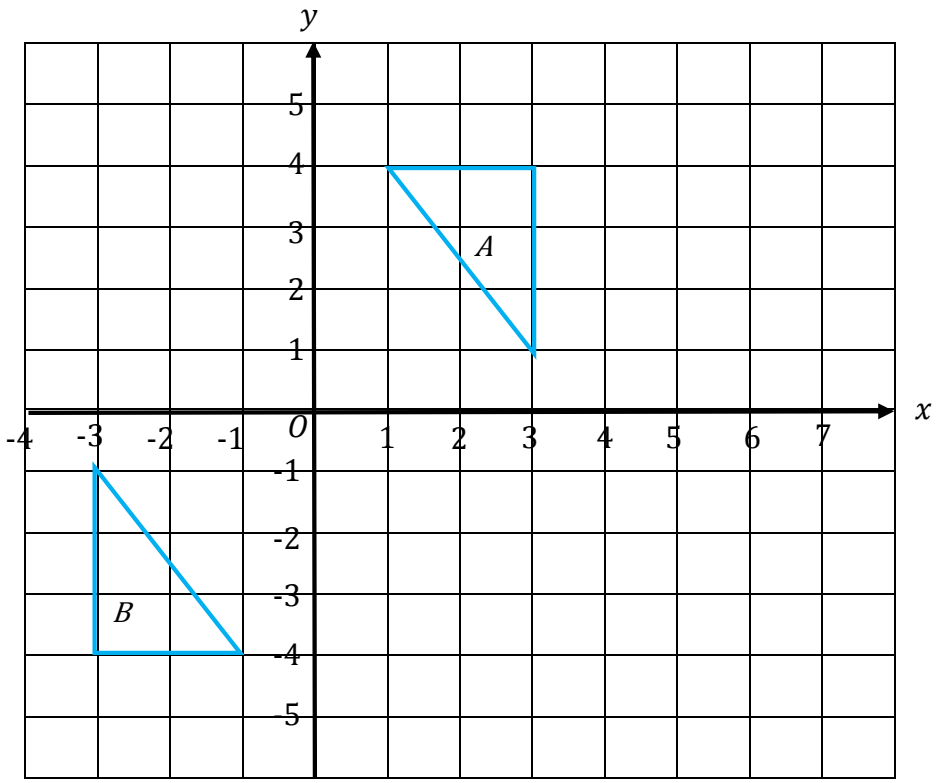
……

……

(3 marks)

5

6 Triangle A and Triangle B are drawn on the grid:



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

……

……

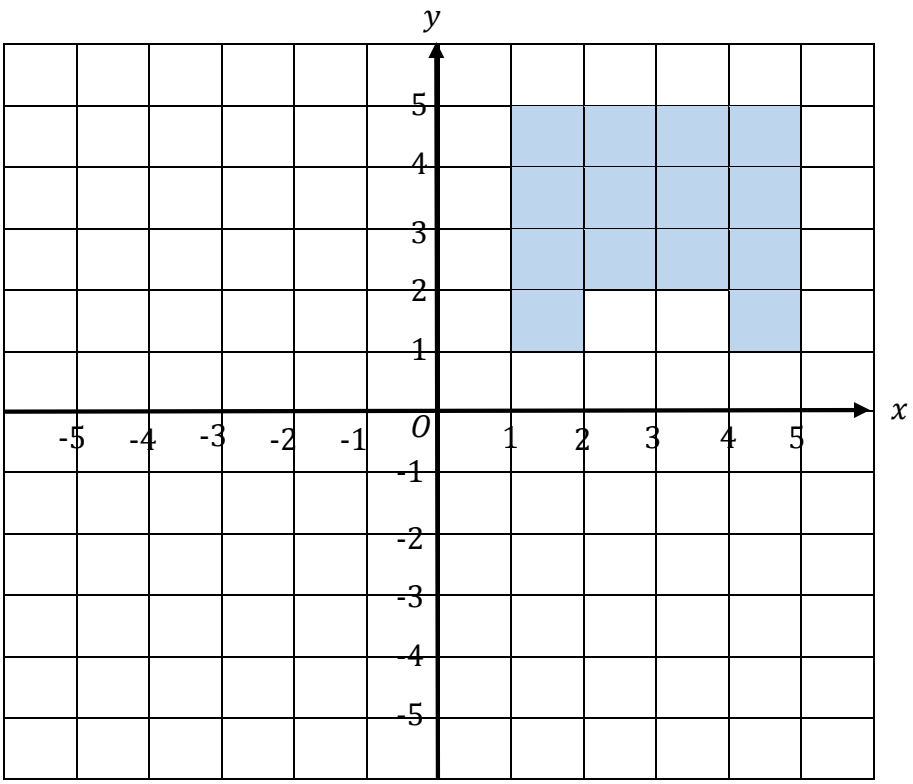
(3 marks)

(b) Translate Triangle A by the vector $\begin{pmatrix} 4 \\ 0 \end{pmatrix}$

Label the new triangle C.

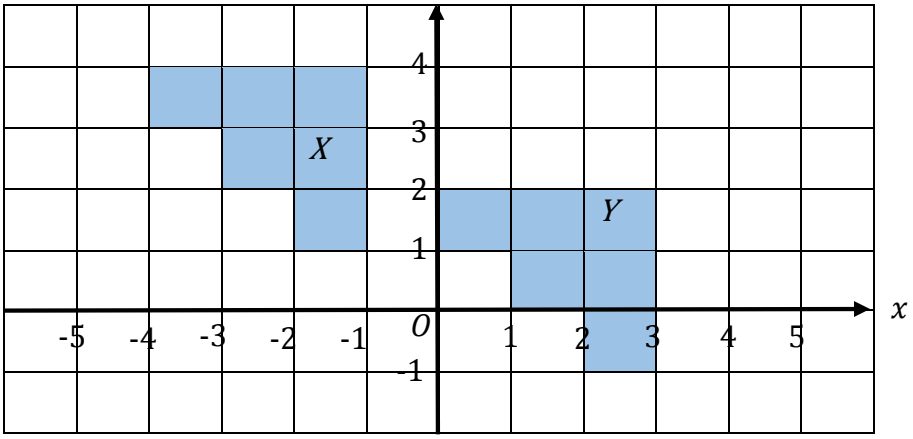
(1 mark)

7



(a) Rotate the shaded shape on the grid above $180°$ clockwise about the point O.

(2 marks)



(b) Describe fully the single transformation which maps shape X onto shape Y.

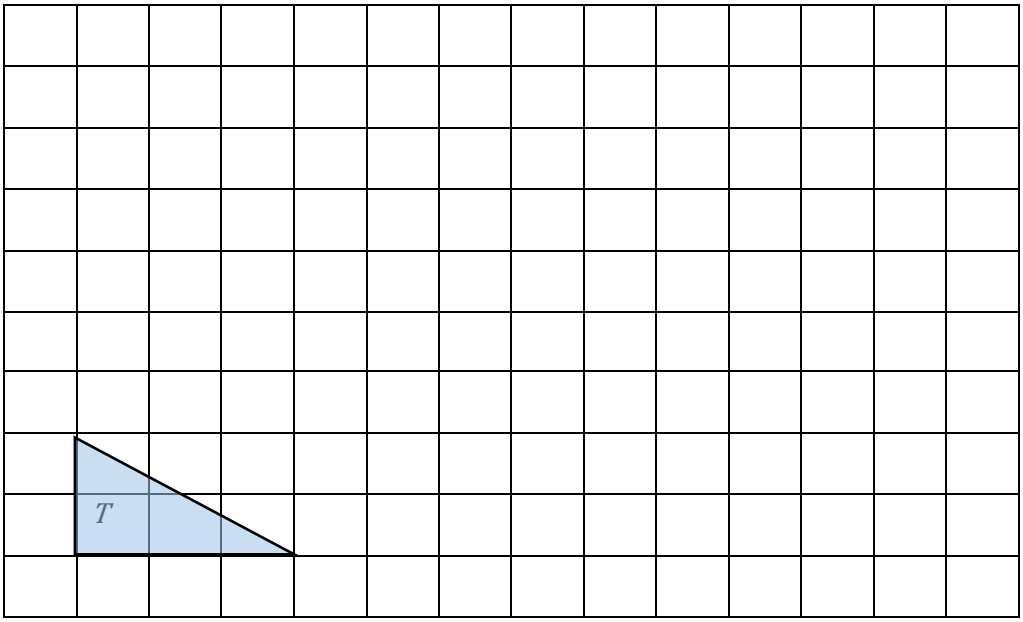
……....

……

(2 marks)

8

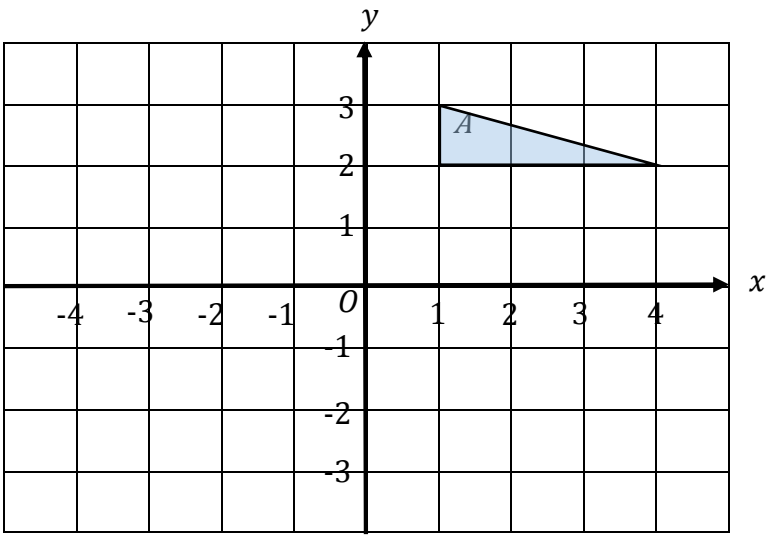
8 Triangle T has been drawn on a grid:



(a) On the grid, draw an enlargement of Triangle T with a scale factor 3.

(2 marks)

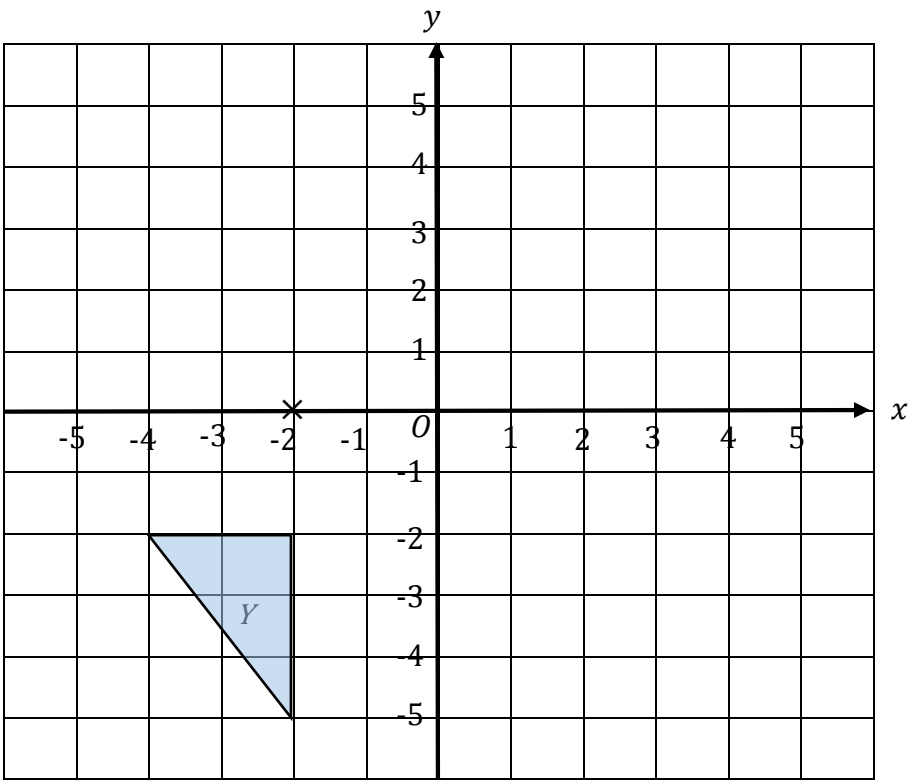
Triangle A has been drawn on a grid:



(b) On the grid, rotate Triangle A clockwise about point 0.

(2 marks)

9



(a) Rotate Triangle Y 180° clockwise about the point (-2, 0).

Label the new triangle Q.

(2 marks)

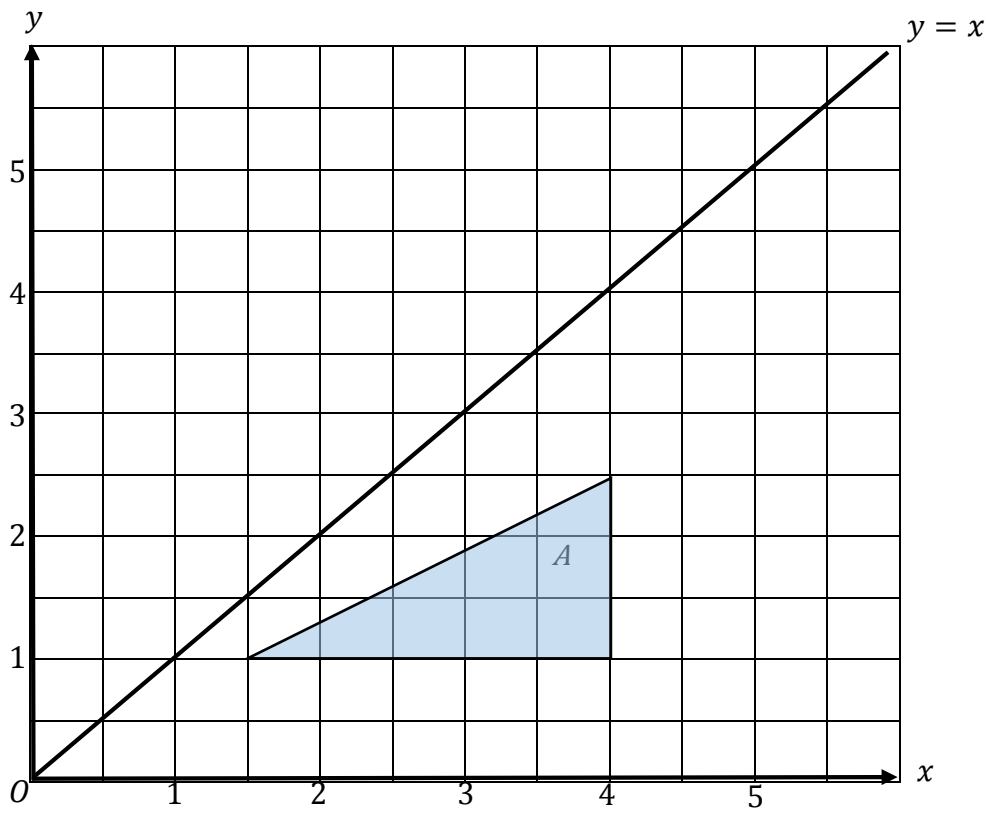
(b) Translate Triangle Y by the vector $\begin{pmatrix} 7 \\ -1 \end{pmatrix}$.

Label the new triangle R.

(1 mark)

7

10

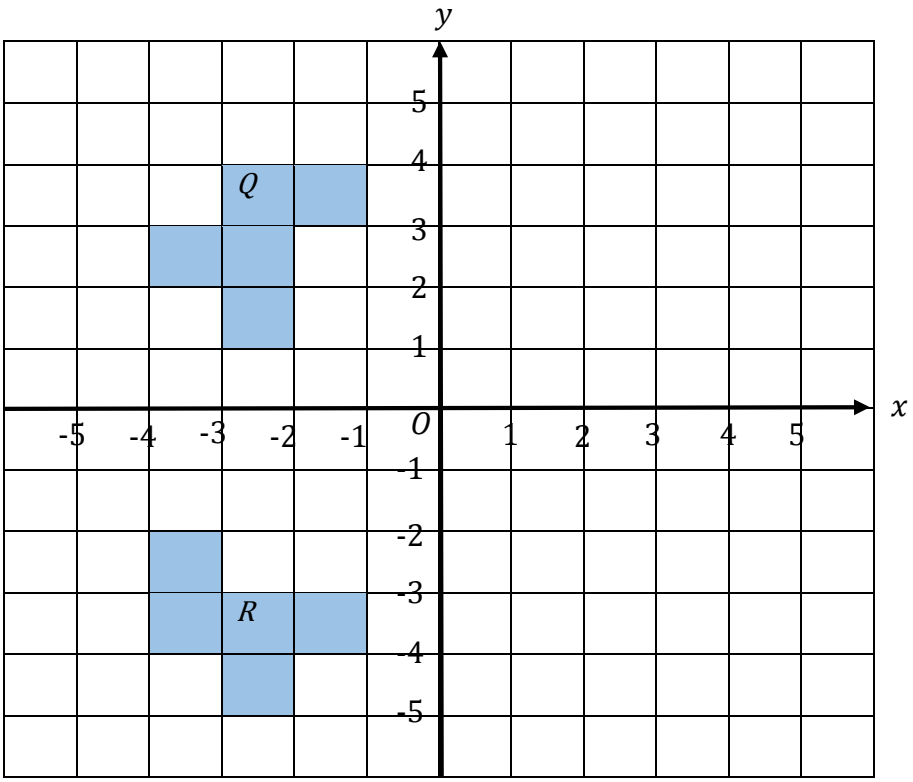


Reflect Triangle A in the line $y = x$.

Label the new triangle N.

(2 marks)

11



(a) Reflect shape Q in the y axis.

(2 marks)

(b) Describe fully the **single** transformation which maps shape Q onto shape R.

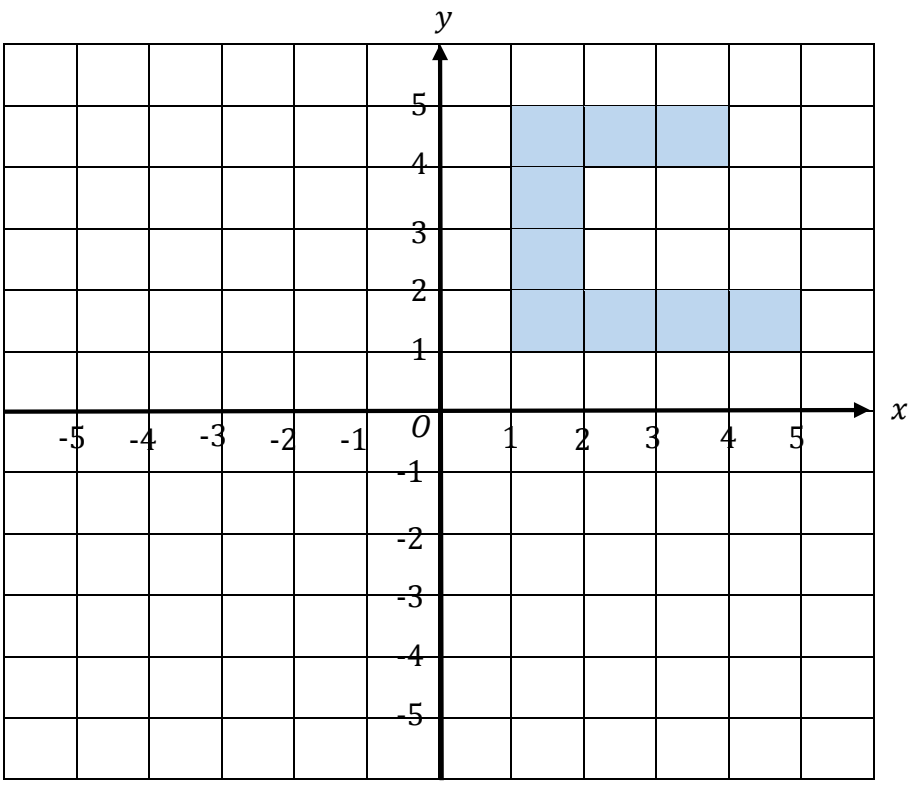
……....

……

(2 marks)

6

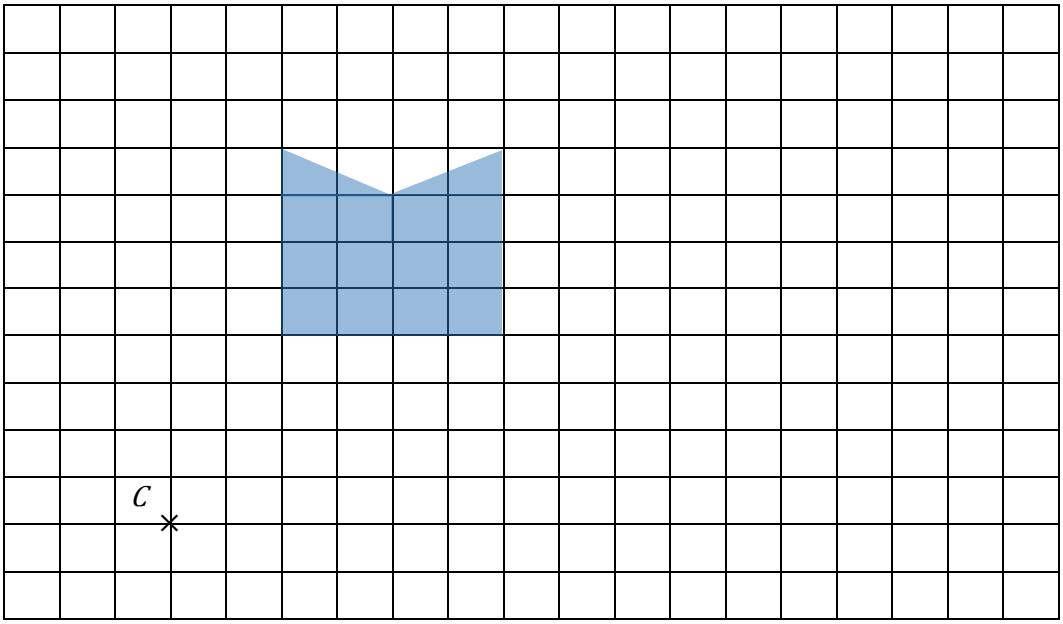
12



Rotate the shape on the grid above $180°$ about the point O.

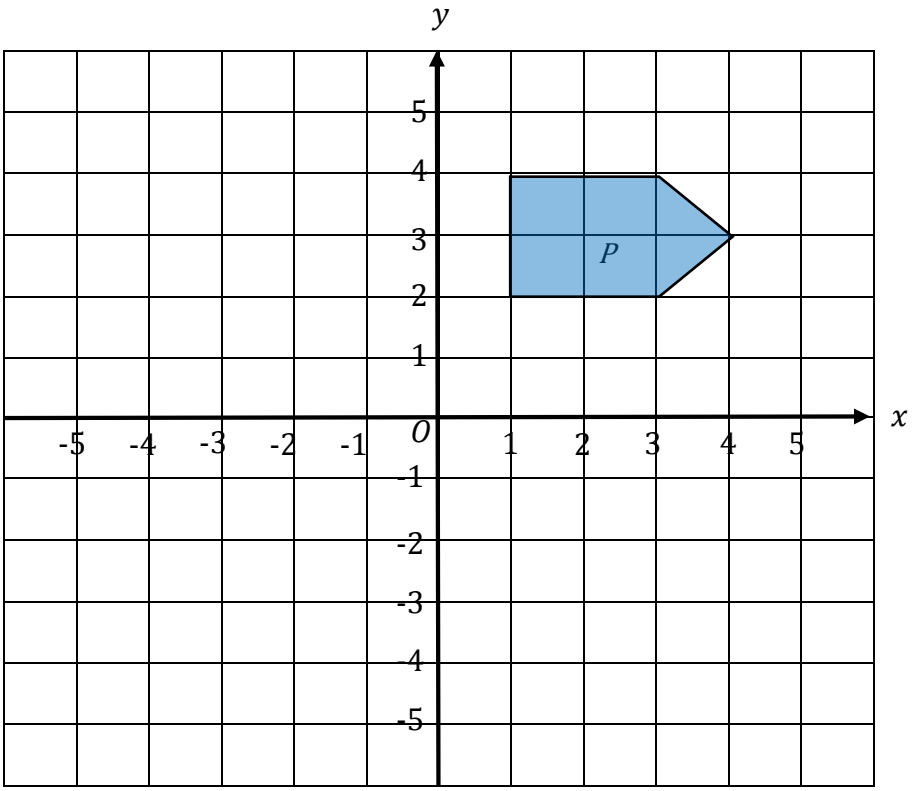
(2 marks)

13 On the grid below, enlarge the shape with a scale factor of ½, centre C.



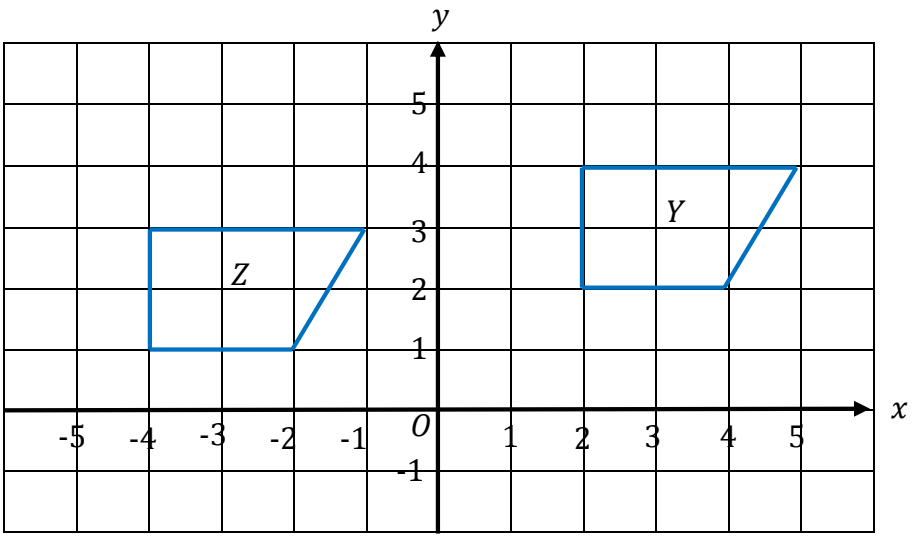
(4 marks)

14



(a) On the grid above, reflect shape P in the line $x = -1$.

(2 marks)



(b) Describe fully the **single** transformation which maps shape Y onto shape Z.

……

……

(2 marks)

END OF QUESTIONS

There are no questions printed on this page

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