

Transformations

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

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 spaces 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 you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

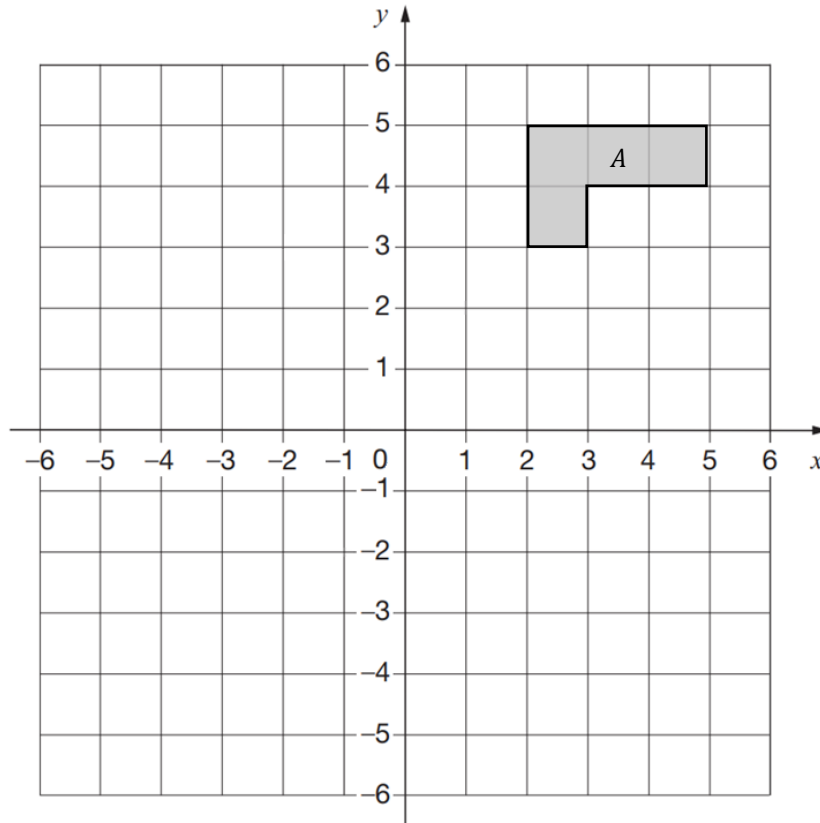
- In all calculations, show clearly how you work out your answer.

- 1(a)** Translate the shape *A* by the vector

$$\begin{pmatrix} -7 \\ -2 \end{pmatrix}$$

Label the new shape *B*.

[2 marks]



- 1(b)** Translate the shape *B* by the vector

$$\begin{pmatrix} 4 \\ -3 \end{pmatrix}$$

Label the new shape *C*.

[2 marks]

- 1(c)** Describe fully the single transformation from *A* to *C*.

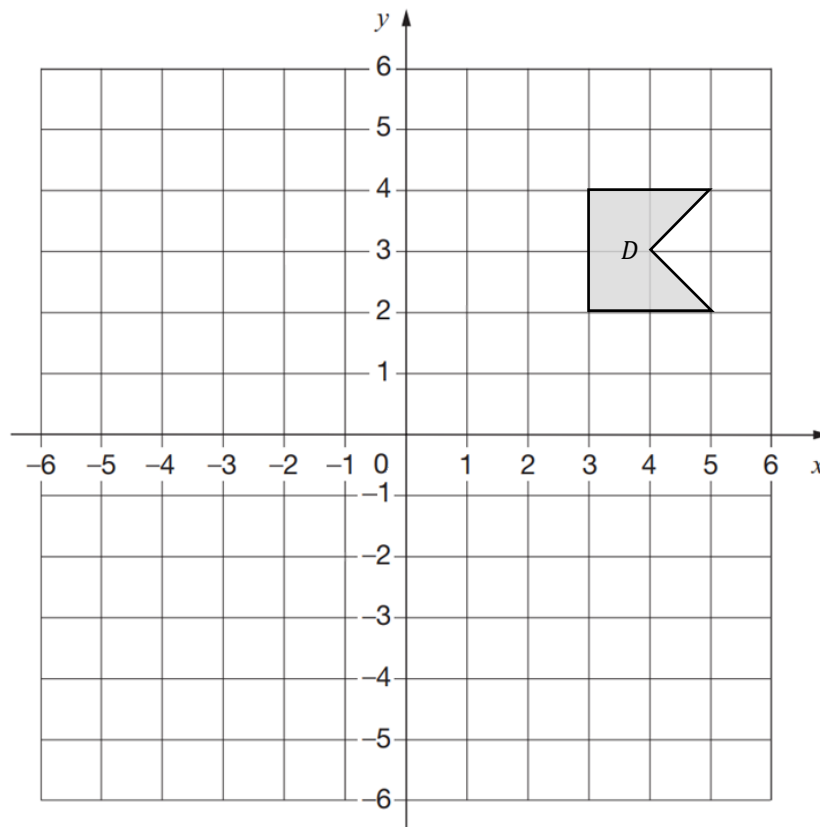
[2 marks]

Turn over for next question

Turn over ►

- 2(a)** Rotate the shape D by 180° clockwise about $(0,0)$.
Label the new shape E .

[2 marks]



- 2(b)** Rotate the shape D by 90° anticlockwise about $(0,0)$.
Label the new shape F .

[2 marks]



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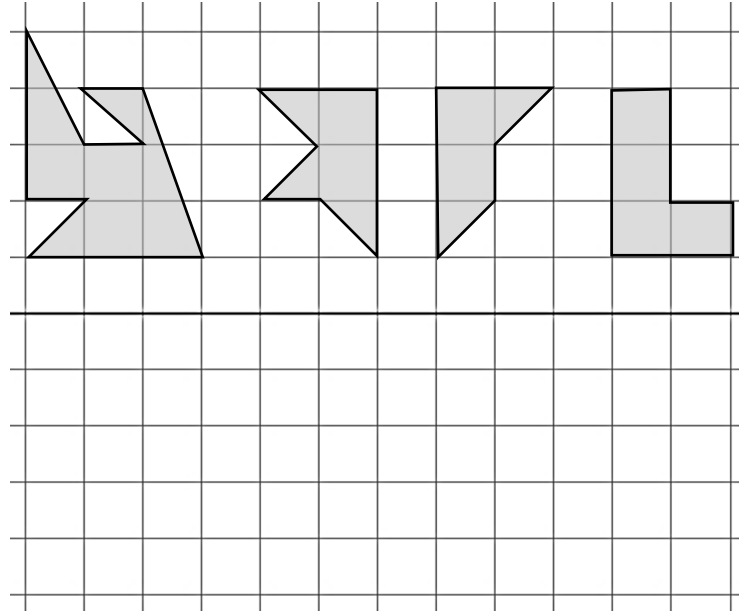
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Turn over ►

- 3 Reflect the four shapes below in the line of reflection.

[4 marks]



- 4 Reflect the shape G separately in the following three lines.

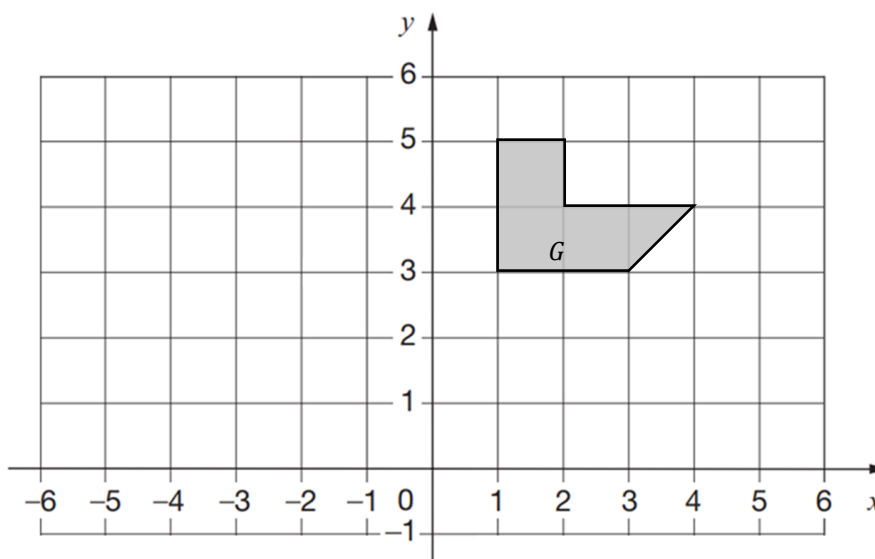
Label each new shape with the appropriate letter

$$y = 3 \quad \mathbf{H}$$

$$x = -1 \quad \mathbf{J}$$

$$y = 4 - x \quad \mathbf{K}$$

[3 marks]

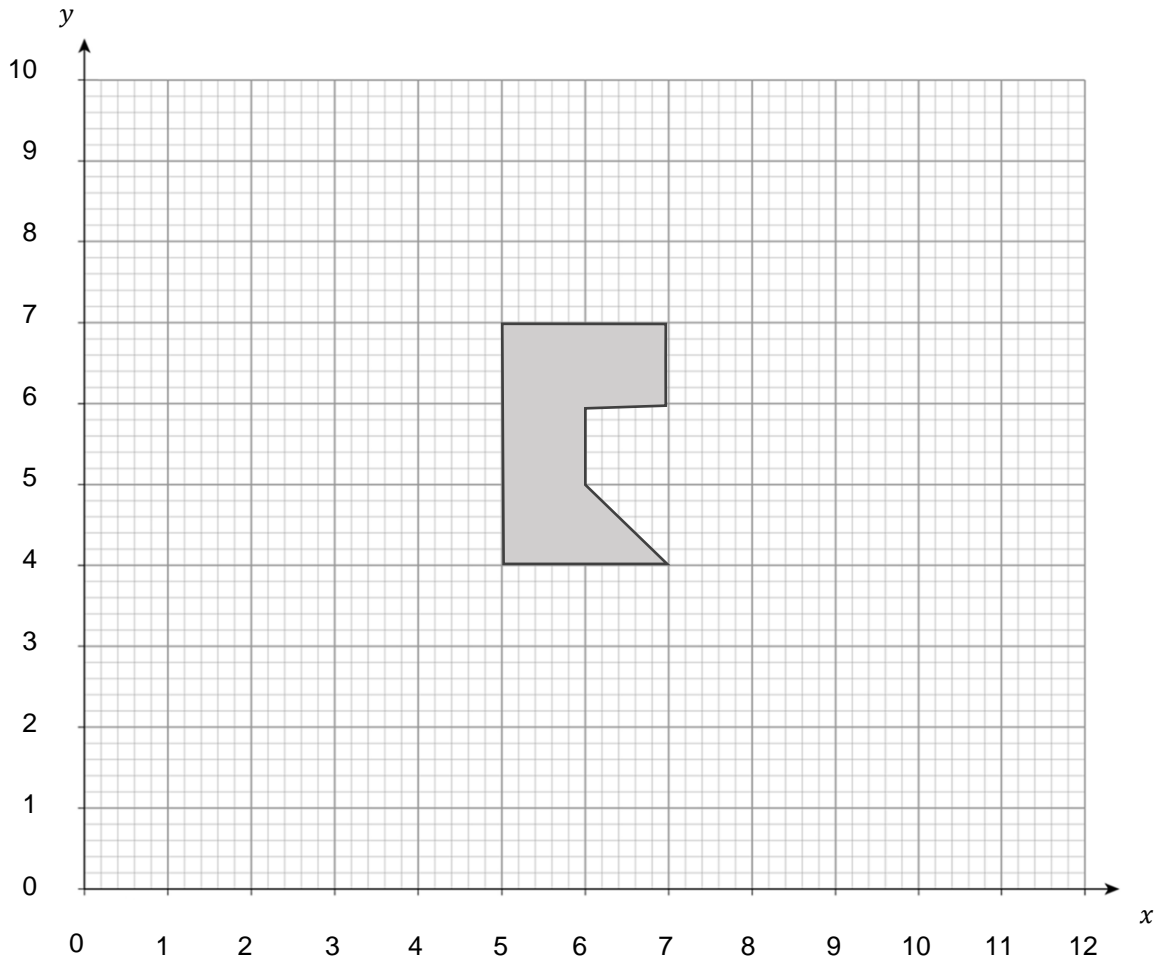


Turn over for next question

Turn over ►

- 5 Enlarge the shape below by a scale factor of 0.5 with the center of enlargement at (1,1)

[4 marks]



GCSE Maths Practice Exam Papers

- ✓ GCSE Maths predicted papers and mark schemes
- ✓ Paper 1, 2, 3 and mark scheme in every set
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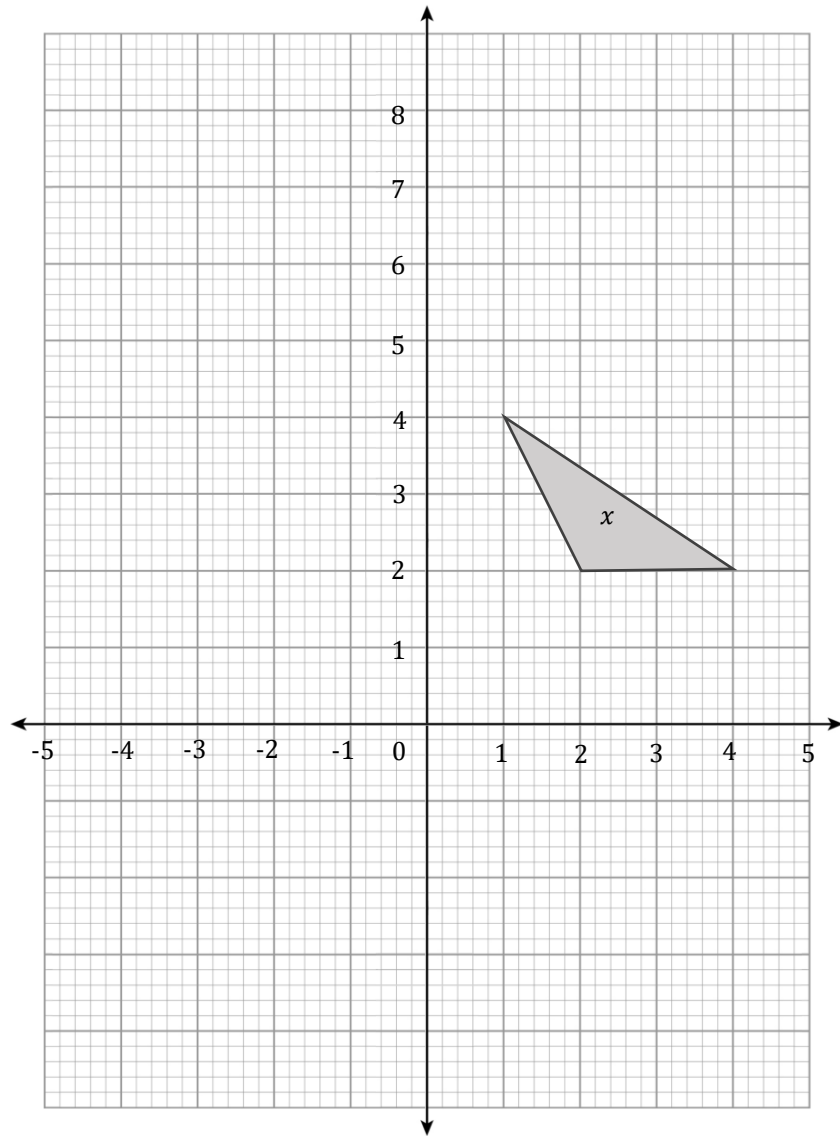
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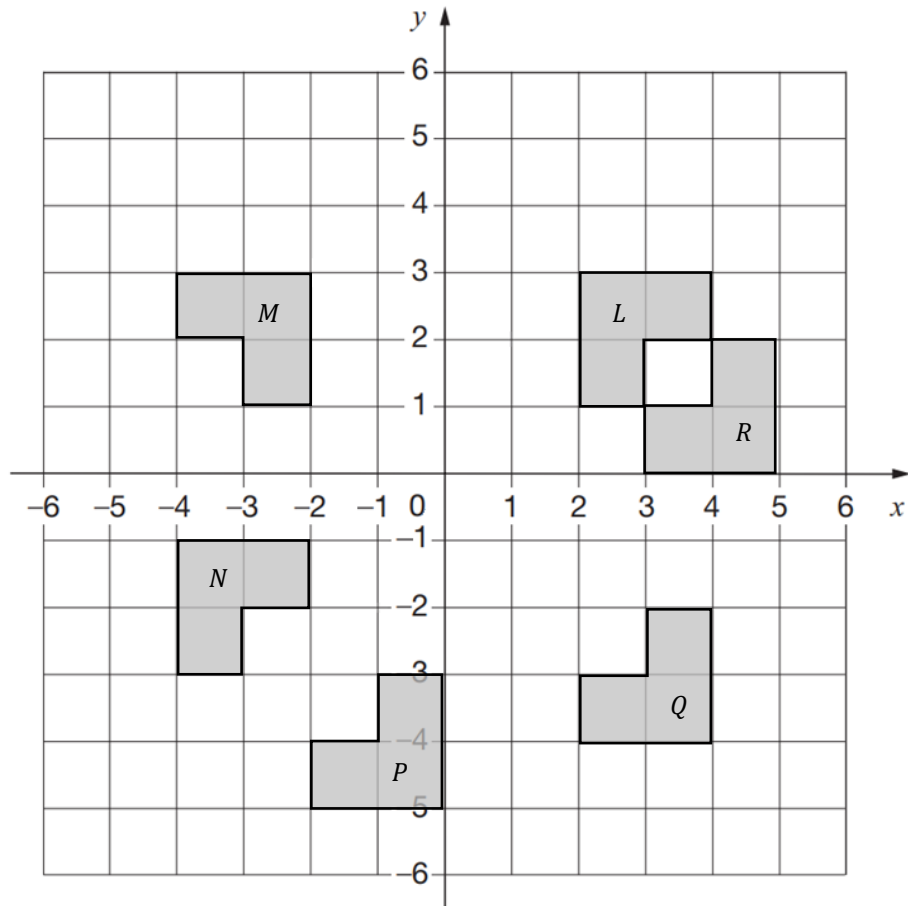
Turn over ►

- 6 Enlarge the shape X by a scale factor of -1 with center of enlargement $(0,0)$.
Label the new shape Y .

[3 marks]



- 7** Each shape below has undergone a single transformation, starting from shape *L*.
Describe fully each transformation.



- 7(a)** From shape *L* to shape *M*:

[1 mark]

Answer _____

- 7(b)** From shape *L* to shape *N*:

[1 mark]

Answer _____

Question continues on next page

7(c) Shape L to shape P :

[1 mark]

Answer _____

7(d) Shape L to shape Q

[1 mark]

Answer _____

7(e) Shape L to shape R

[1 mark]

Answer _____



GCSE Maths Revision Guide

- ✓ GCSE Maths Course 9-1 Revision Guide
- ✓ Exam Questions Included
- ✓ All exam boards - AQA, OCR, Edexcel, WJEC
- ✓ Suitable for higher and foundation tiers

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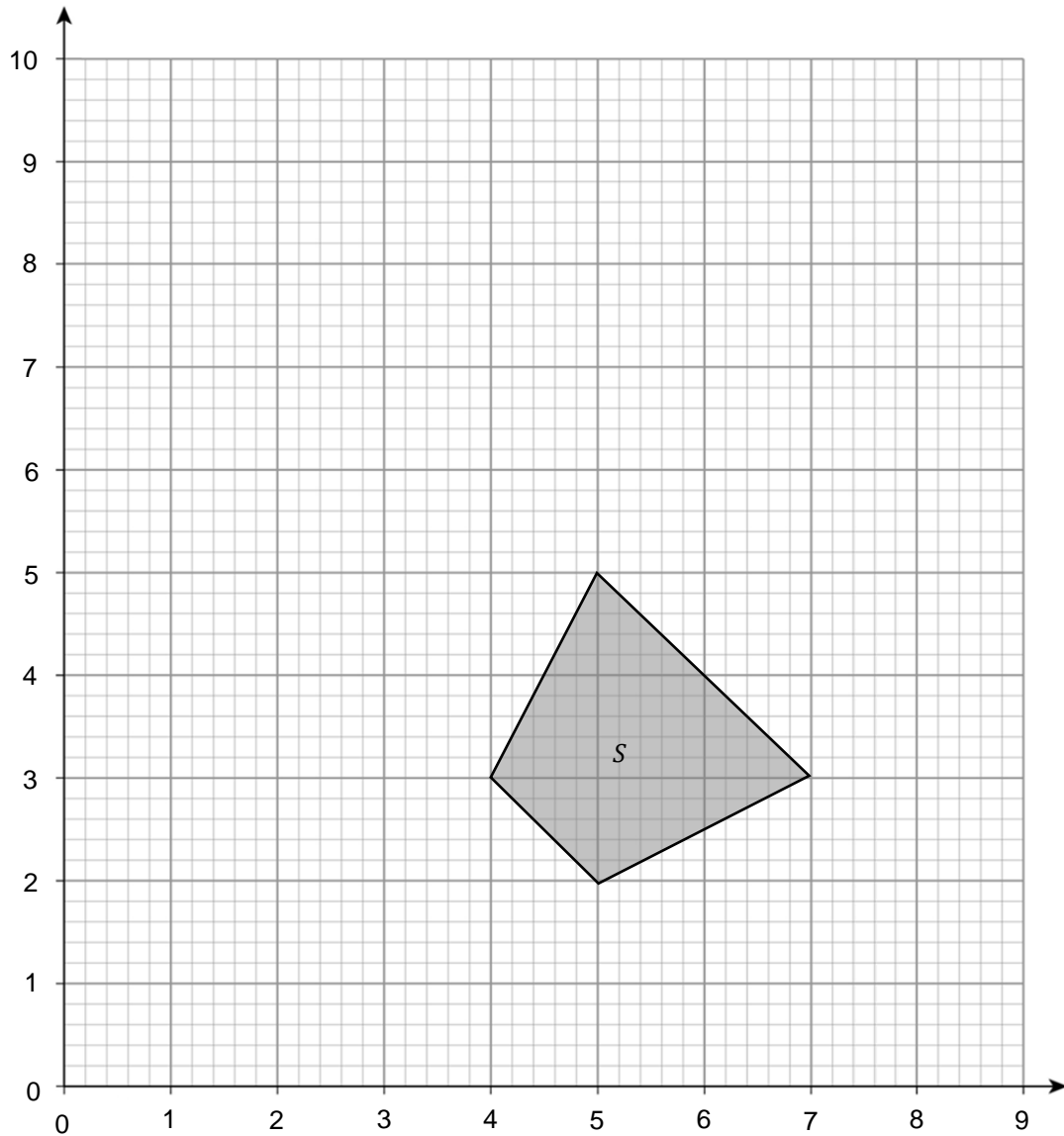
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8 For the following transformations, **write down which points are invariant**.

8(a) Reflect the shape S in the line $y = 7 - x$.

Label the new shape T .

[2 marks]



8(b) Translate the shape S by the vector $(-3, 0)$. Label the new shape U .

[2 marks]

8(c) Rotate the shape S by 180° about $(5, 5)$. Label the new shape W .

[2 marks]

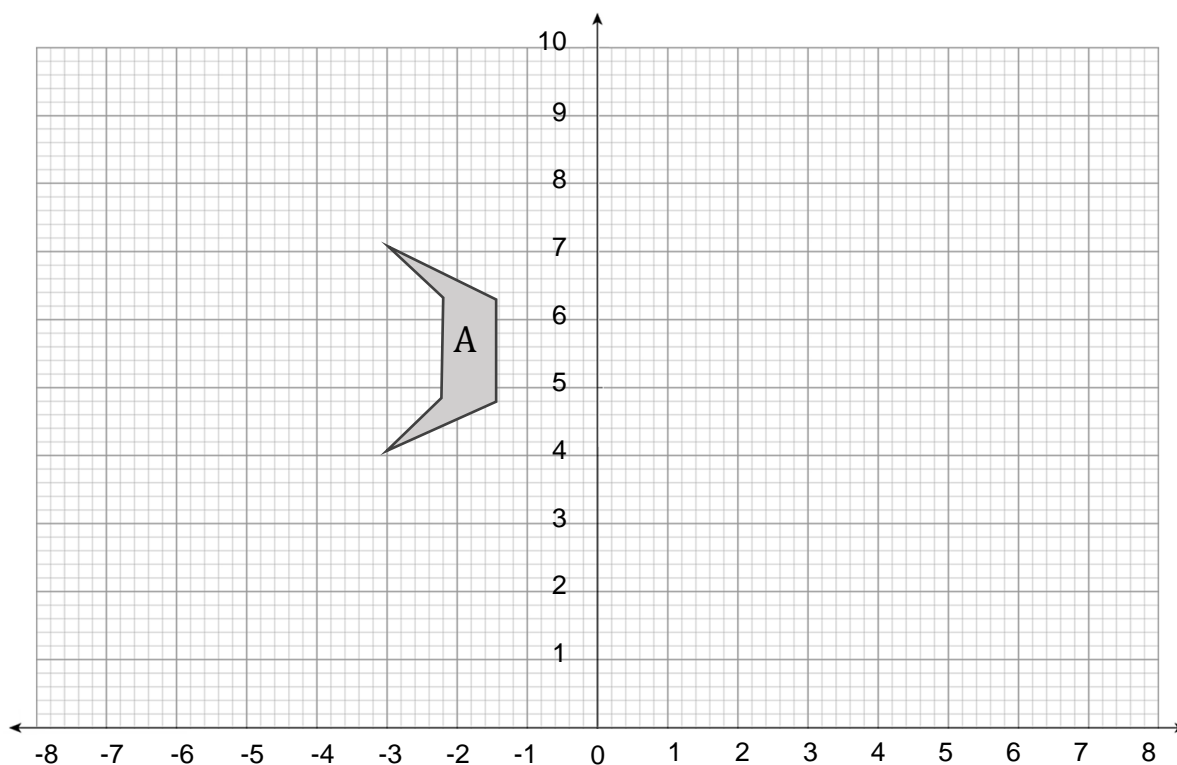
9 Enlarge the shape *A* below as follows

9(a) Centre of enlargement $(-7,5)$ scale factor 2.5. Label the new shape *B*.

[2 marks]

9(b) Centre of enlargement $(-7,9)$ scale factor 1.5. Label the new shape *C*.

[2 marks]

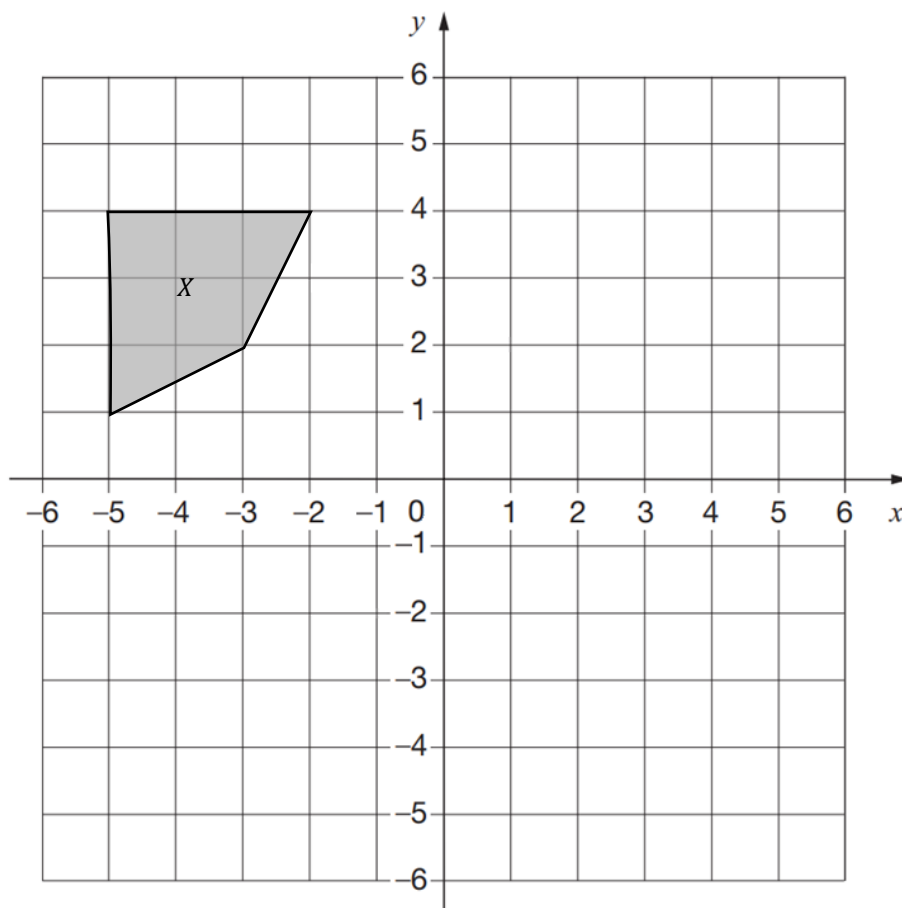


9(c) Mark the center of enlargement as *X* on your diagram for the transformation that maps shape *C* to shape *B*?

[2 marks]

- 10(a)** Reflect the shape X in the line with gradient 1 such that the point $(-3,2)$ is invariant. Label the new shape Y .

[2 marks]



- 10(b)** Rotate shape Y by 270° clockwise such that the point $(-1,0)$ is invariant. Label the new shape Z .

[2 marks]

- 10(c)** Can Z be translated such that there are invariant points on Z ? Give your reasoning.

[1 mark]

End of questions

END