

Centre name					Surname				
Centre Number					Other Names				
Candidate Number					Signature				

GCSE

Mathematics (Linear)

Answers at: <http://www.mathsmadeeasy.co.uk/gcsemathsrevisionpapers.htm>

Basic Transformations

Translate, enlarge, rotate, reflect, tessellate

Marks shown in brackets for each question (2)

Question	Type of question	Marks
1	Translation	5
2	Enlargement	7
3	Reflection	8
4	Rotation	10
5	Describing transformations	9
6	Tessellation	3

Instructions

Write your name and other details in the boxes above.
Answer all the questions

Information

Marks are shown in brackets for each question (2)
There are 24 Questions. Total marks 42

Calculators can be used

Advice

Don't spend too long on one question
Show all your working in calculations for full marks
You will get marks for method even if your answer is incorrect
Leave a question until later if you cannot answer it

Authors Note

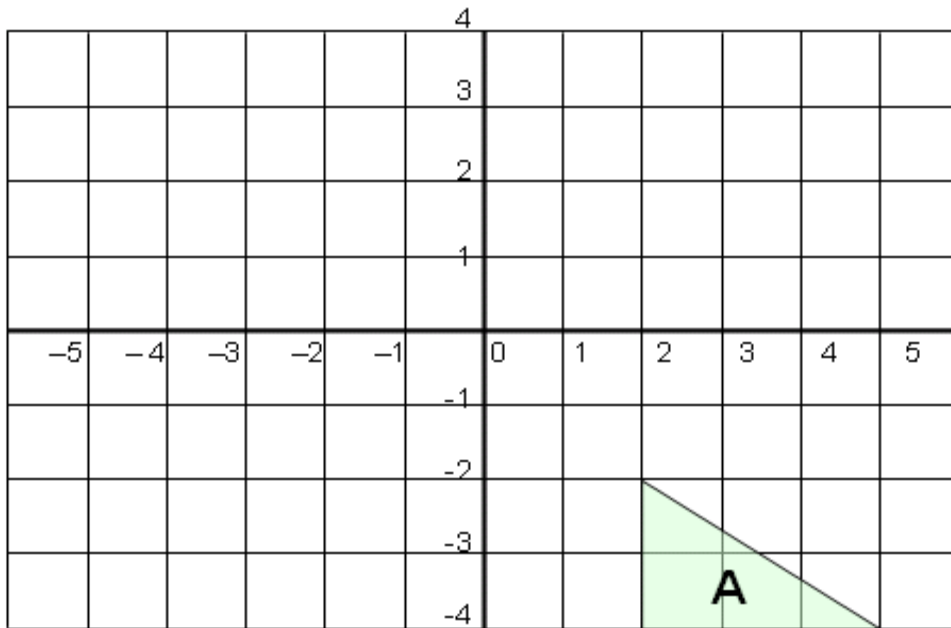
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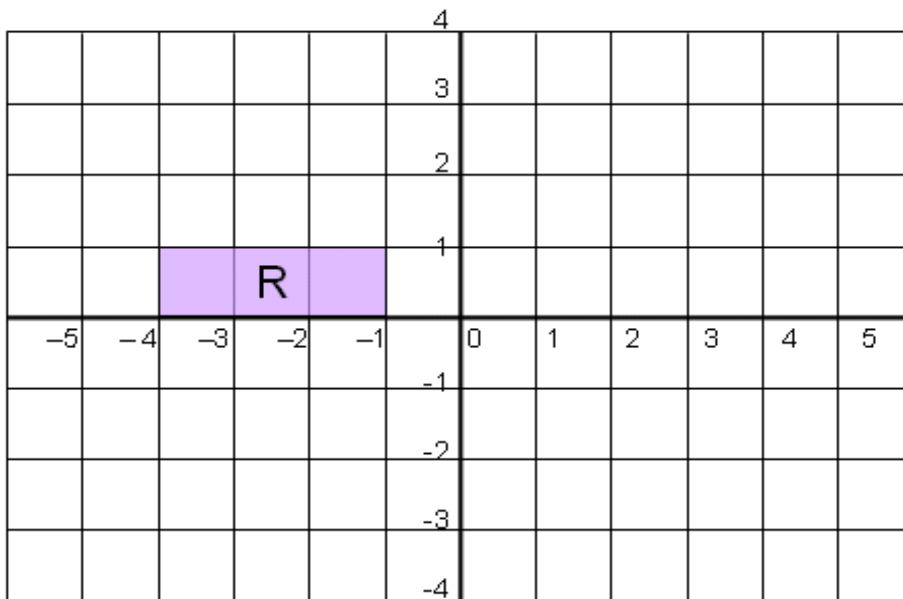
1. Translation

- a) Translate triangle A by the vector $\begin{pmatrix} +1 \\ +5 \end{pmatrix}$ Label the new triangle B.



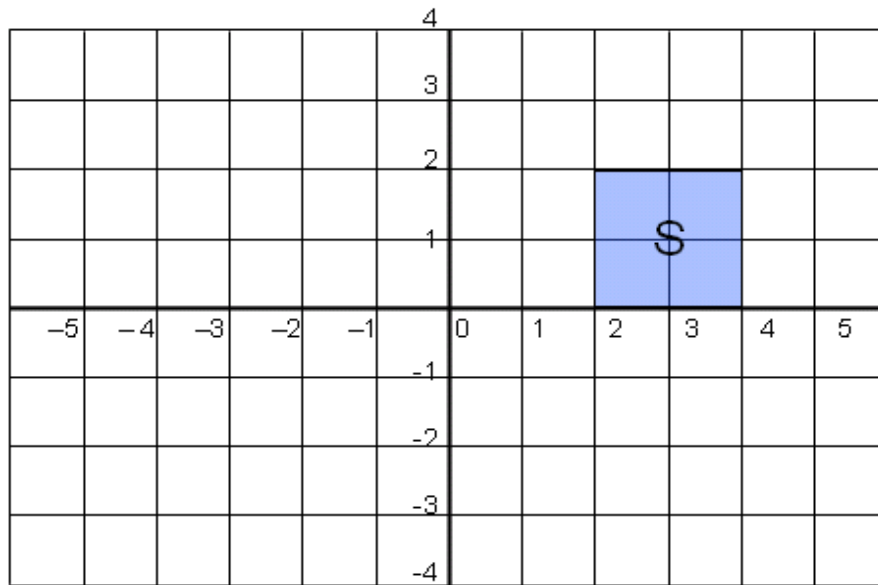
(1)

- b) Translate rectangle R by the vector $\begin{pmatrix} +6 \\ -2 \end{pmatrix}$ Label the new rectangle P.



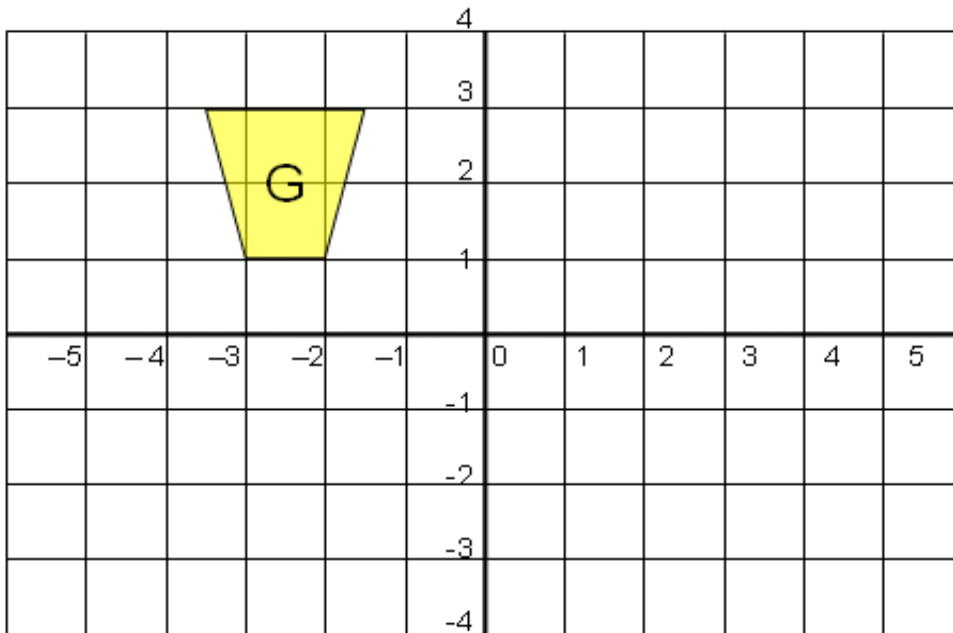
(1)

- c) Translate square S by the vector $\begin{pmatrix} -6 \\ +1 \end{pmatrix}$ Label the new square Q.



(1)

- d) Translate shape G by the vector $\begin{pmatrix} -2 \\ -4 \end{pmatrix}$ Label the new shape H.



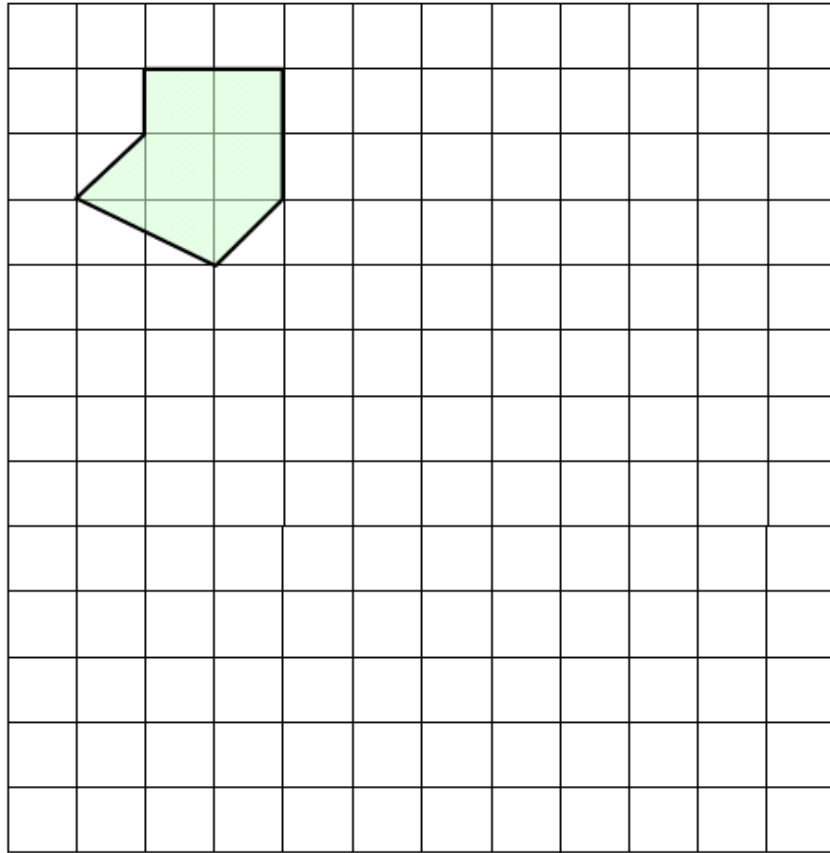
(1)

- e) Name the shape G

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(1)

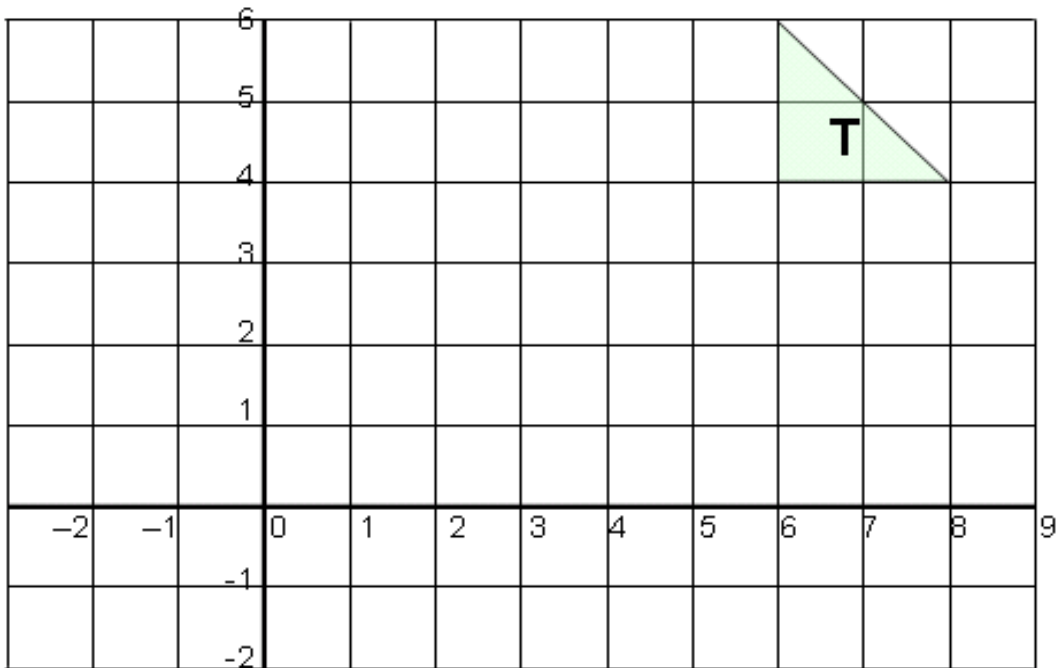
2. Enlargement

a) Enlarge the shape shown below by a factor of three.



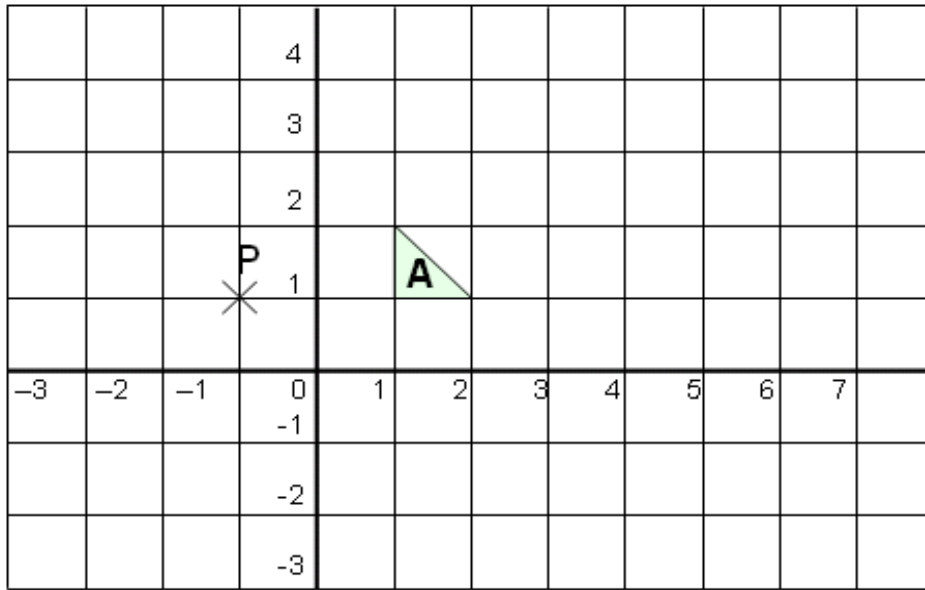
(1)

b) Enlarge the triangle T by a factor of $\frac{1}{2}$ from the origin.



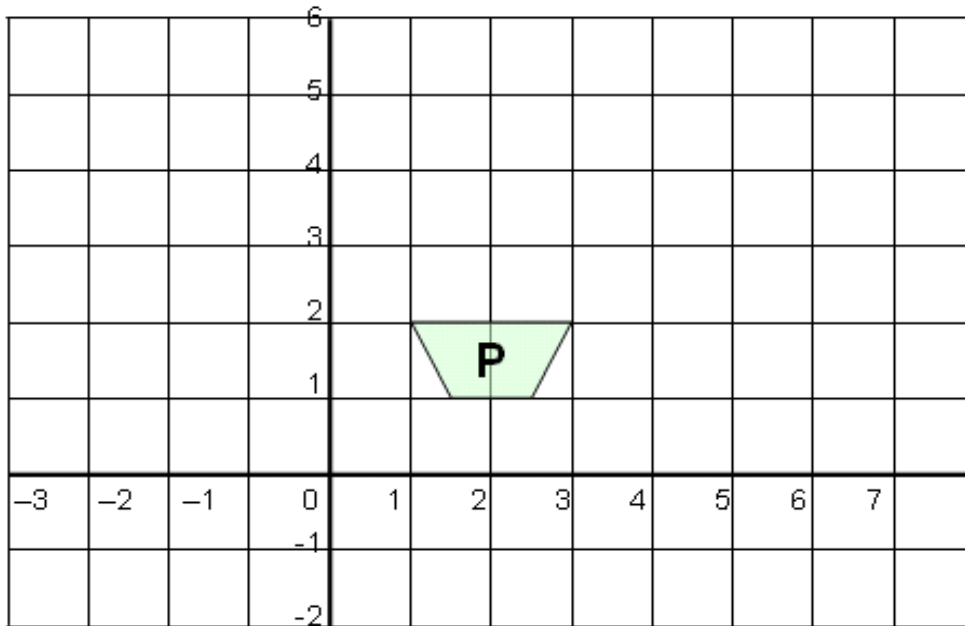
(2)

c) Enlarge the triangle A by a factor of 3 from centre P.



(2)

d) Enlarge shape P by scale factor 2, centre O, to give shape Q.

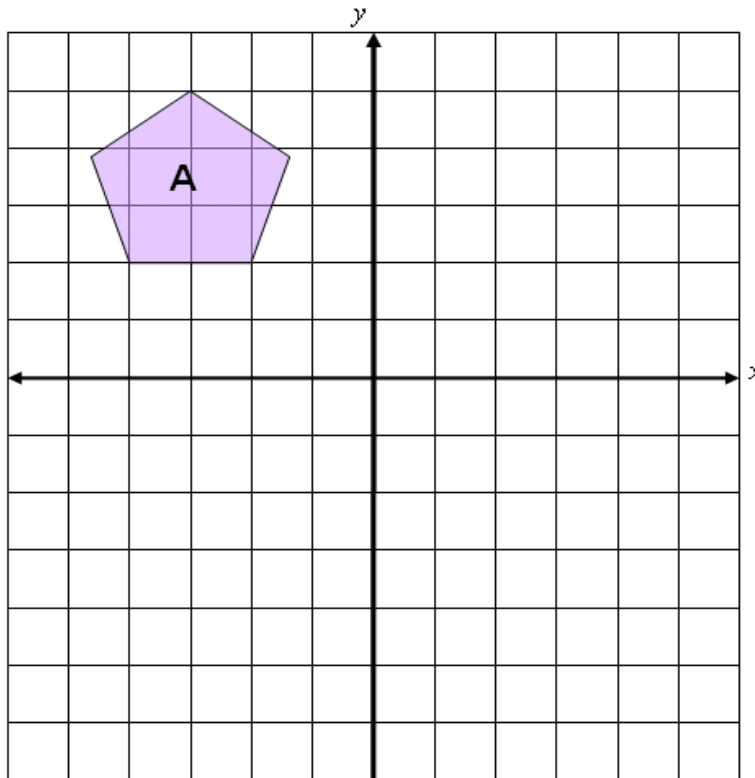


(2)

3. Reflection

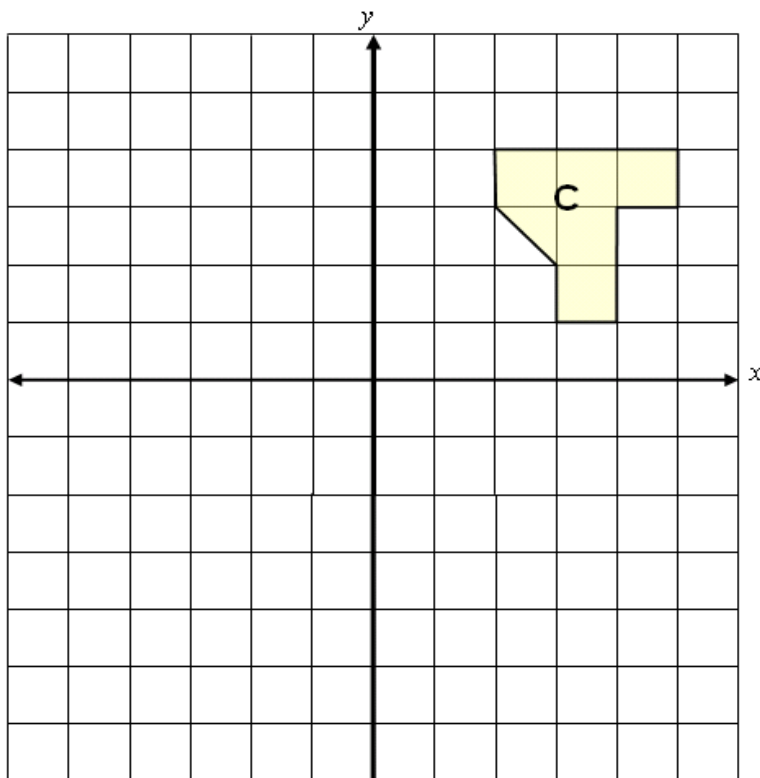
a) Reflect the shape A in the y-axis. Label it B

(2)



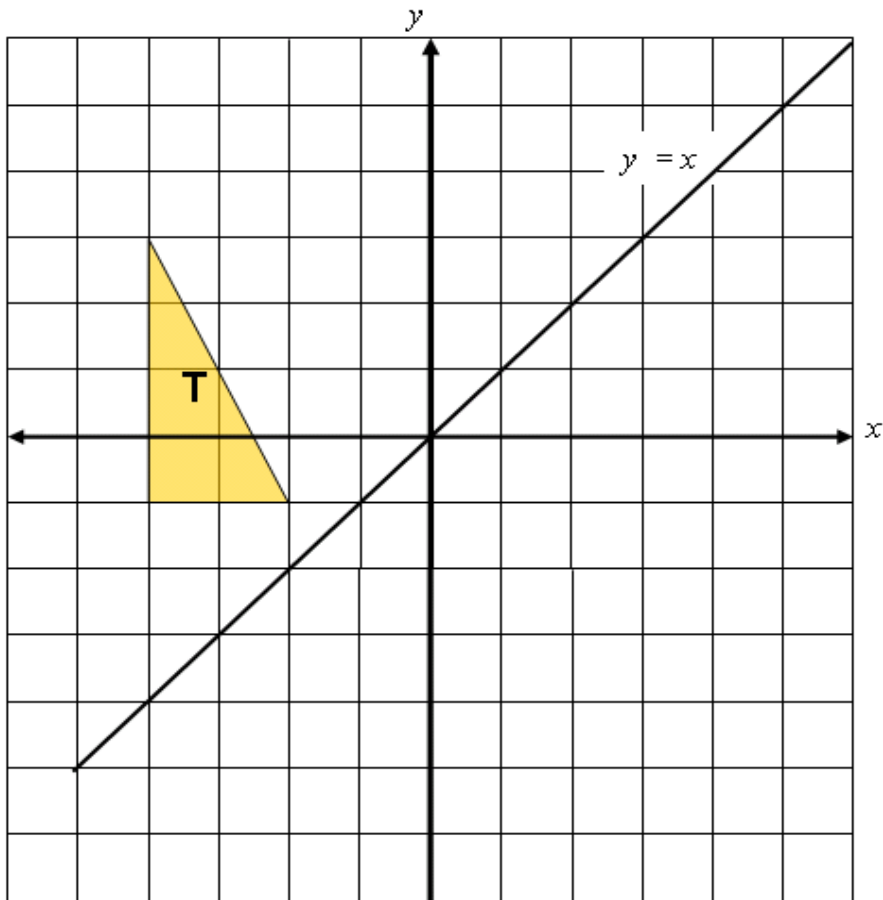
b) Reflect the shape C in the x-axis. Label it D

(2)



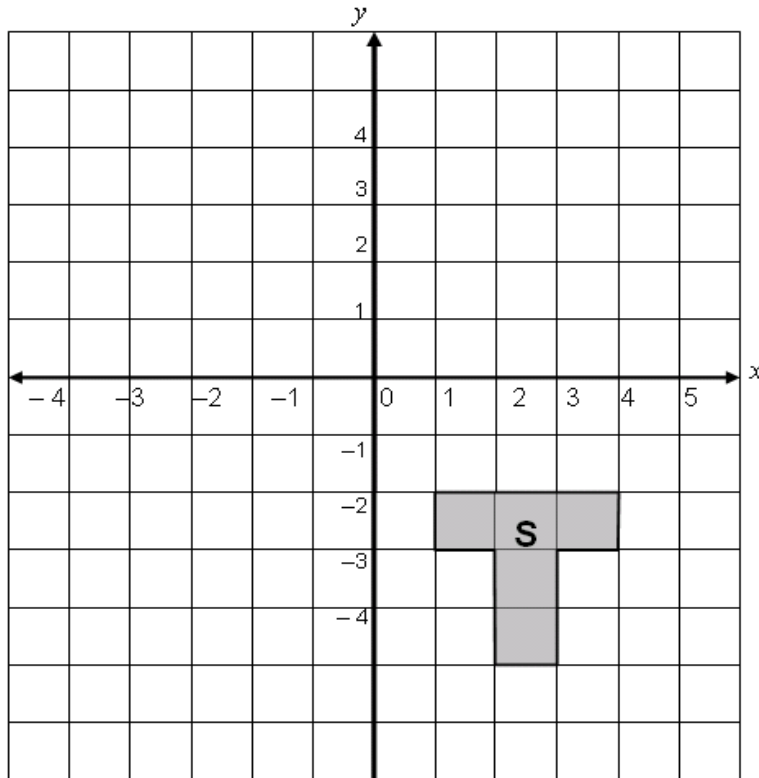
- c) Reflect the triangle T in the line $y = x$
Label it V

(2)



- d) Reflect shape S in the line $y = -1$. Label it T.

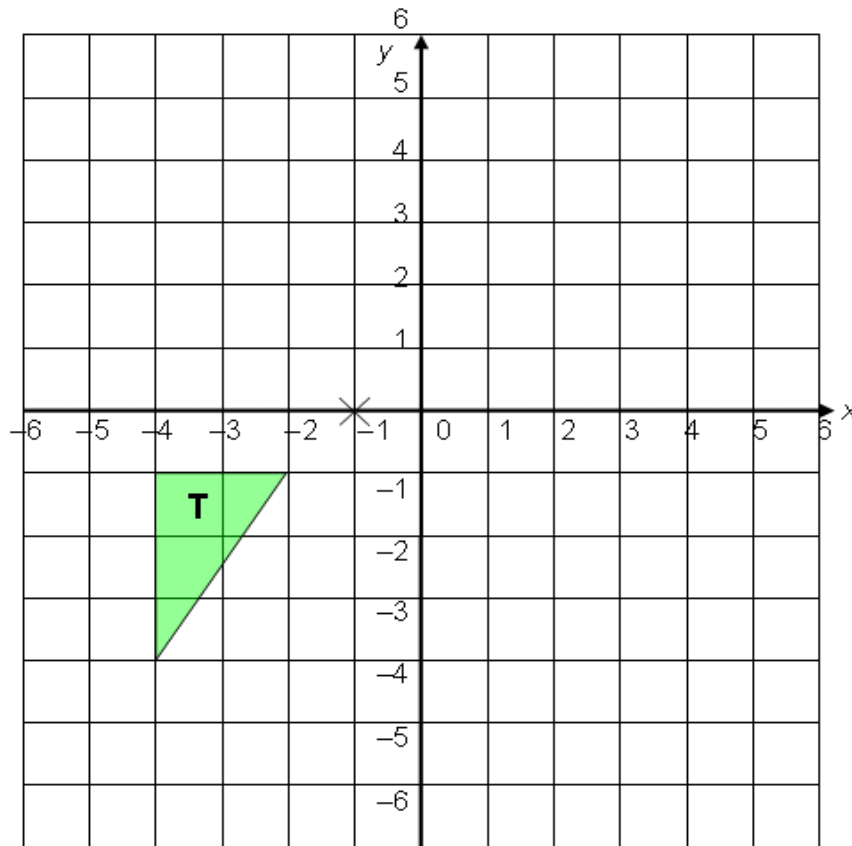
(2)



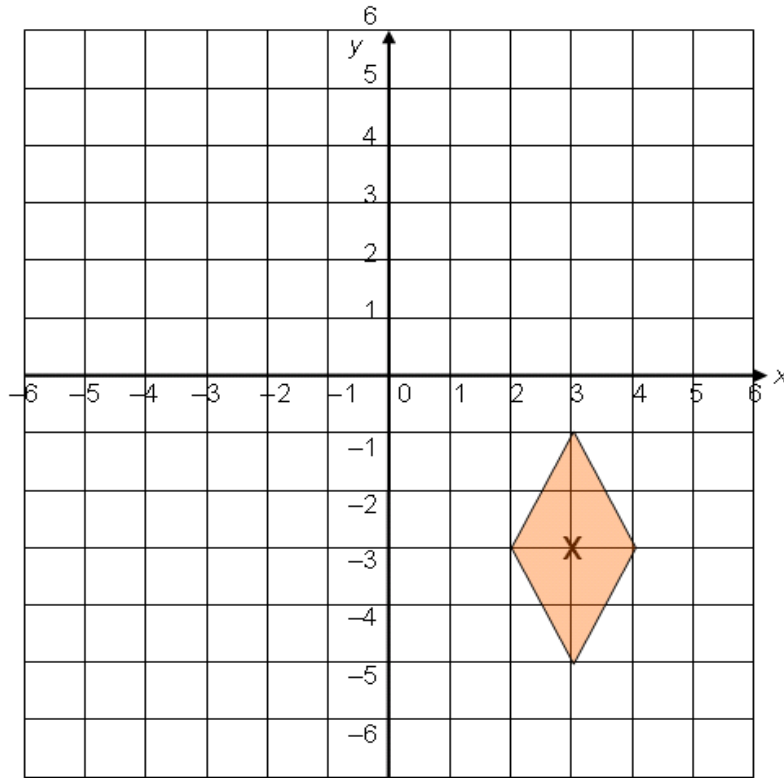
4. Rotation

a) Rotate triangle **T** by 180° about the point $(-1, 0)$. Label it **U**

(3)

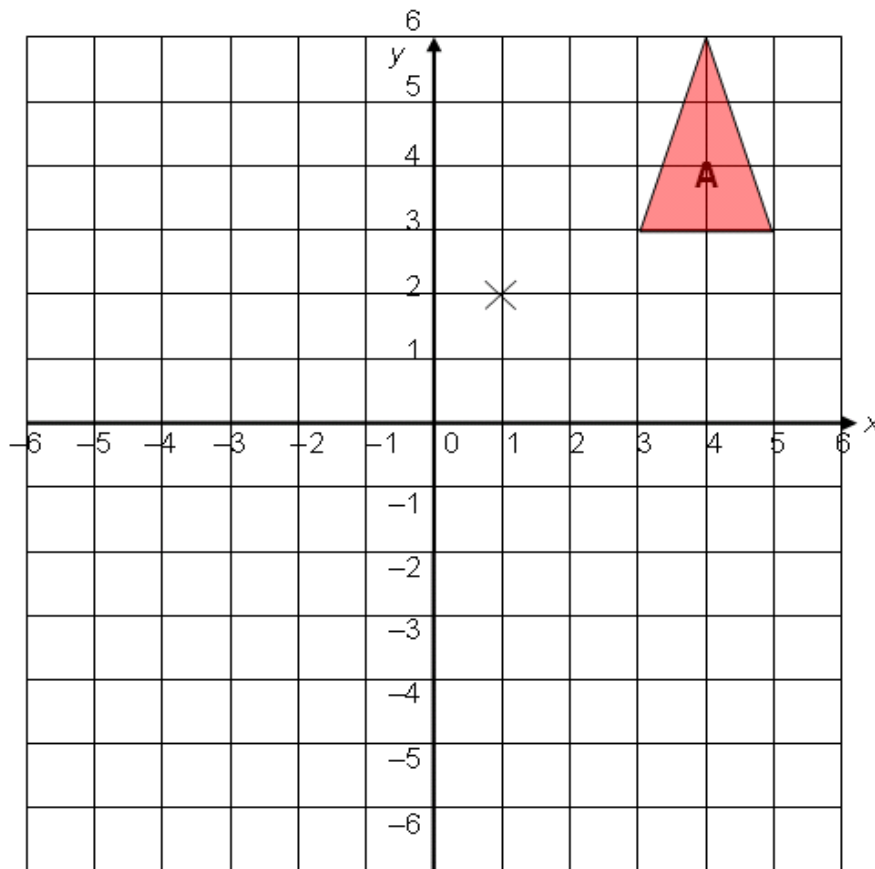


b) Rotate shape **X** by 90° clockwise about the origin $(0, 0)$. Label it shape **Y**



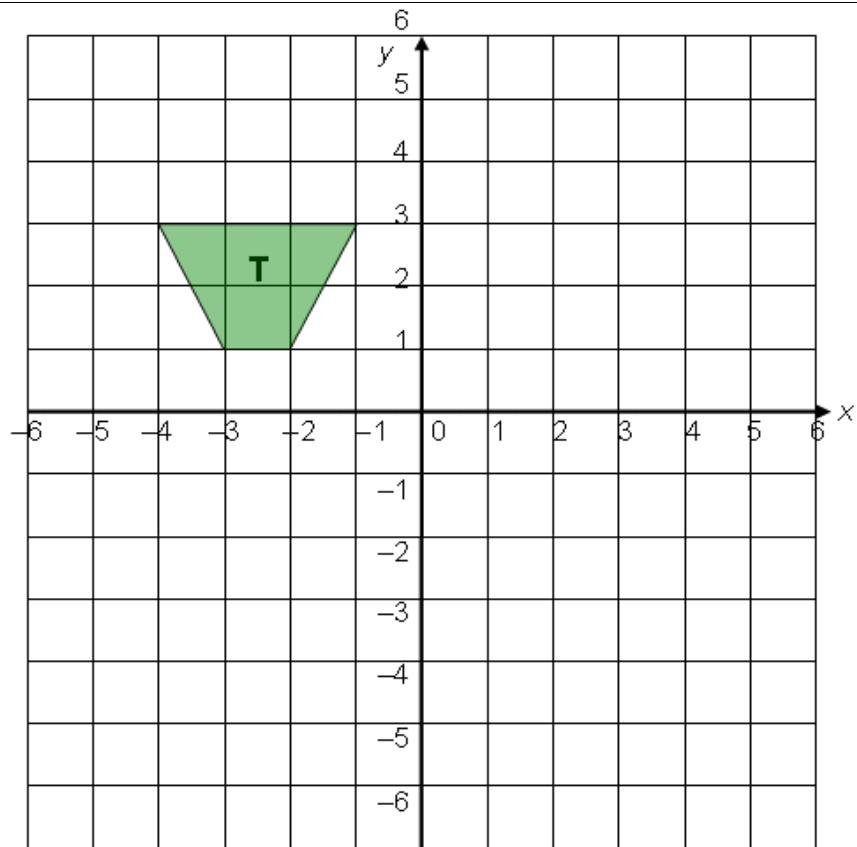
c) Rotate triangle **A** by 90° anticlockwise about the point (1, 2). Label it B

(3)



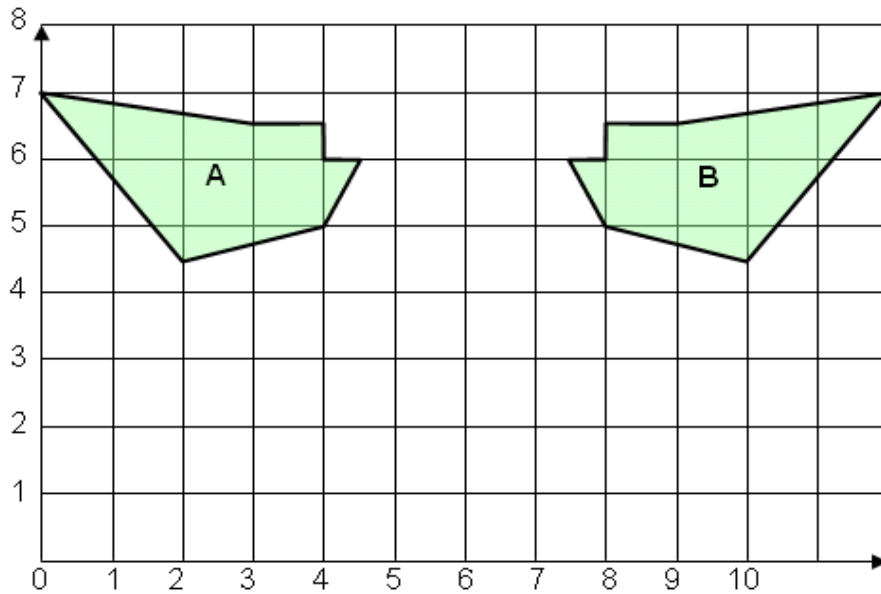
d) Rotate shape **T** by 180° clockwise about the origin (0, 0). Label it V

(2)



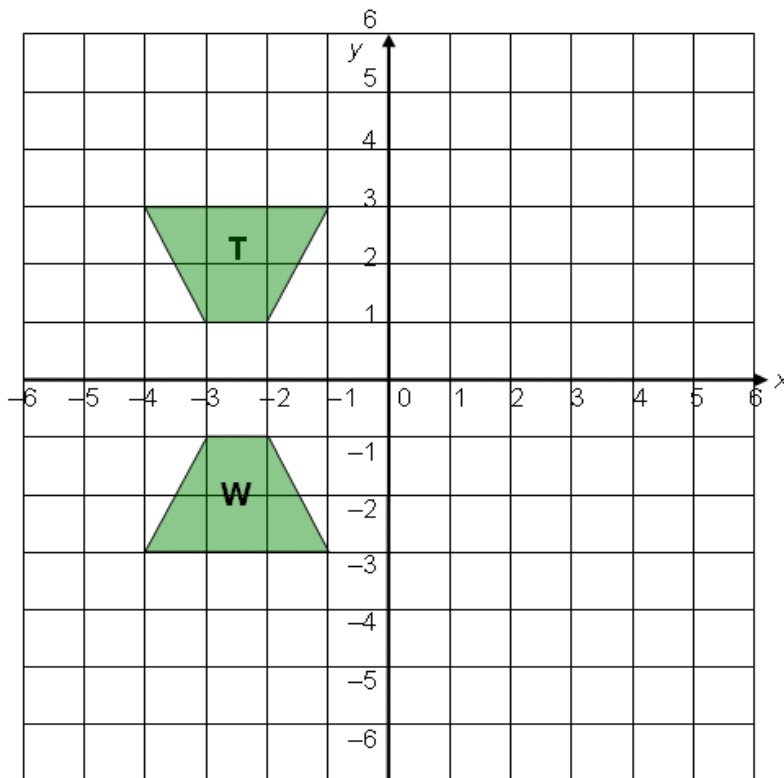
5. Describing Transformations

a) Fully describe the single transformation which takes shape A to shape B



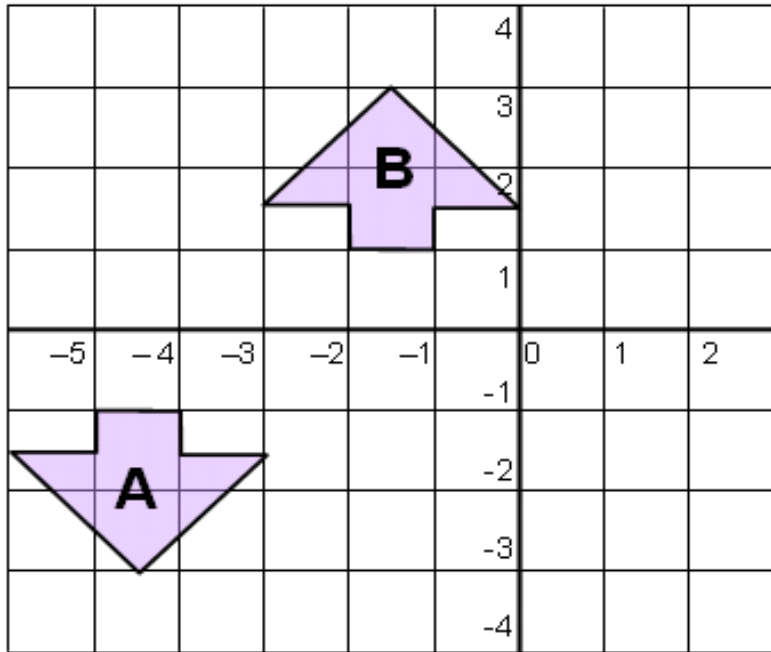
.....
(2)

b) Fully describe the single transformation which takes shape T to shape W



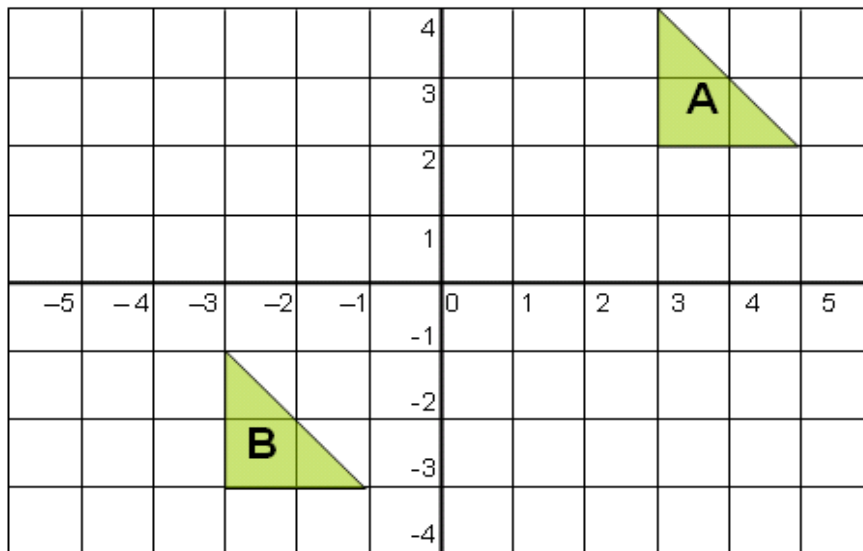
.....

- c) Fully describe the single transformation which takes shape A to shape B



.....
(3)

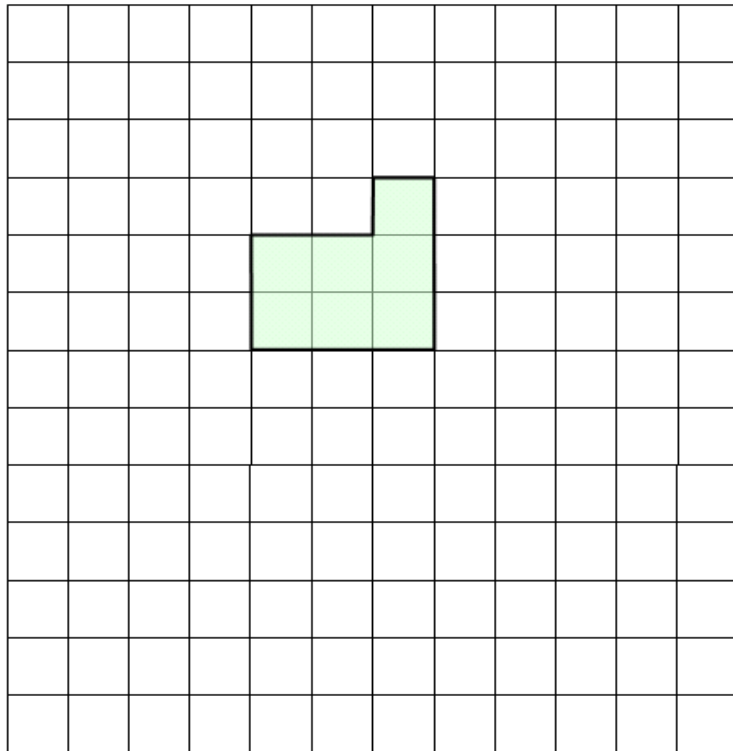
- d) Fully describe the single transformation which takes triangle A to triangle B



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(2)

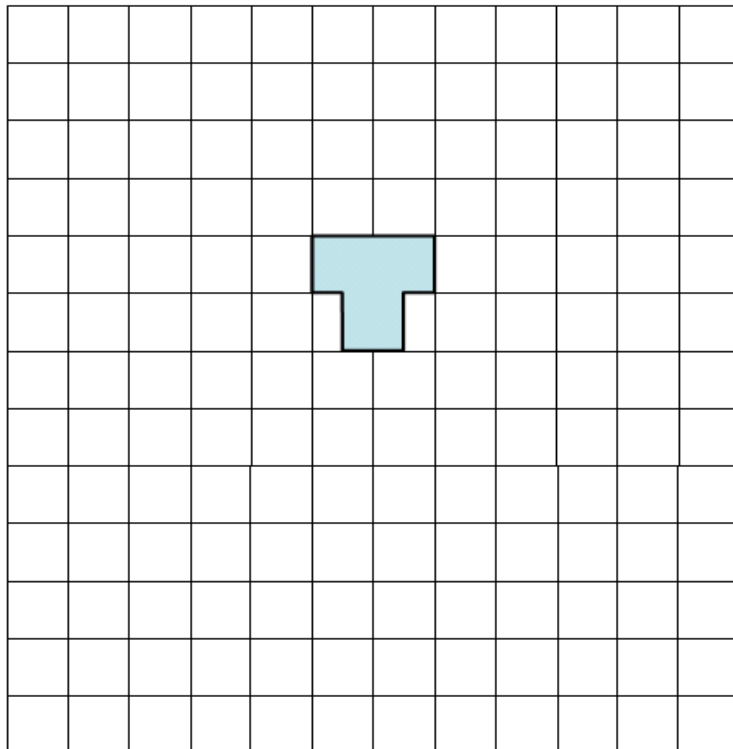
6. Tessellate

- a) On the grid below, show how the shaded shape will tessellate.
You should draw at least six shapes.



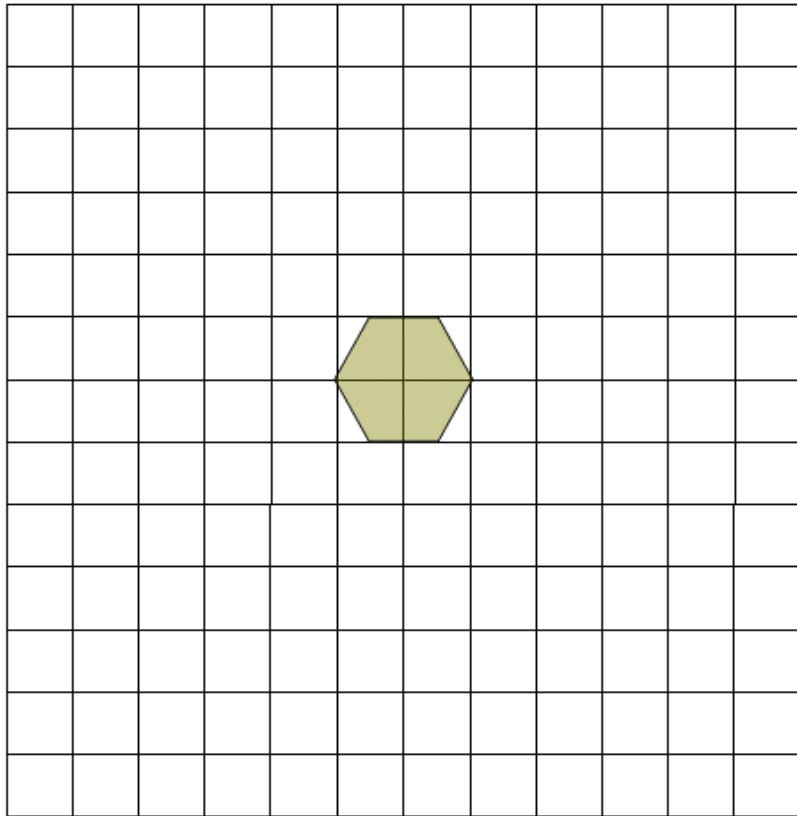
(2)

- b) On the grid draw at least 6 shapes to show how the shape tessellates.



(2)

c) On the grid below draw how this shape tessellates. Make at least 6 shapes.



(2)

END