

Enlargements with Negative Scale Factors

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **22**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** A shape is enlarged by scale factor -3

Tick the statement that is true.

[1 mark]

- ☐ The image is the same way up and 3 times as big
- ☐ The image is upside down and 3 times as big
- ☐ The image is upside down and one third of the size
- ☐ The image is the same size

- 2** The point $(4, 3)$ is enlarged by scale factor -2 with centre $(1, 1)$

Work out the coordinates of the image.

[2 marks]

Answer _____

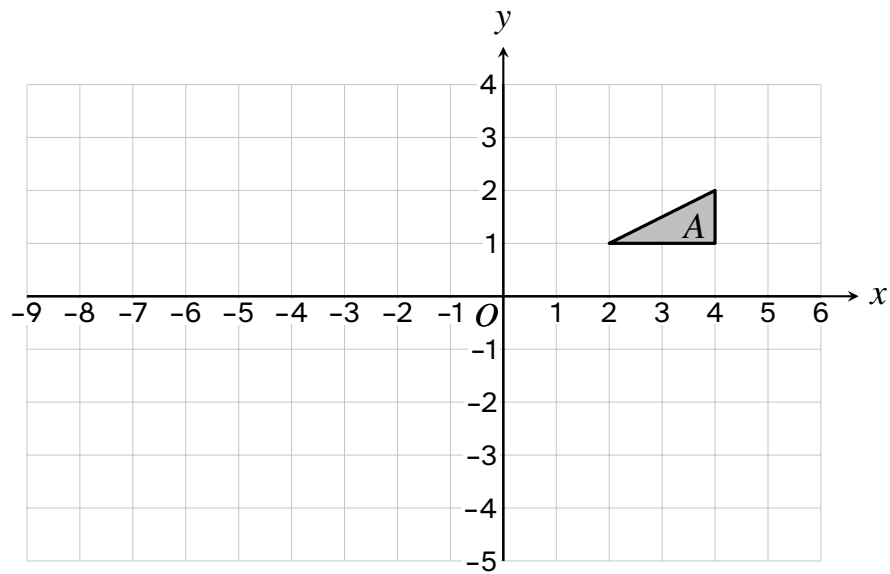
- 3** Triangle T has area 5 cm^2
 T is enlarged by scale factor -3
Work out the area of the image.

[2 marks]

Answer _____ cm^2

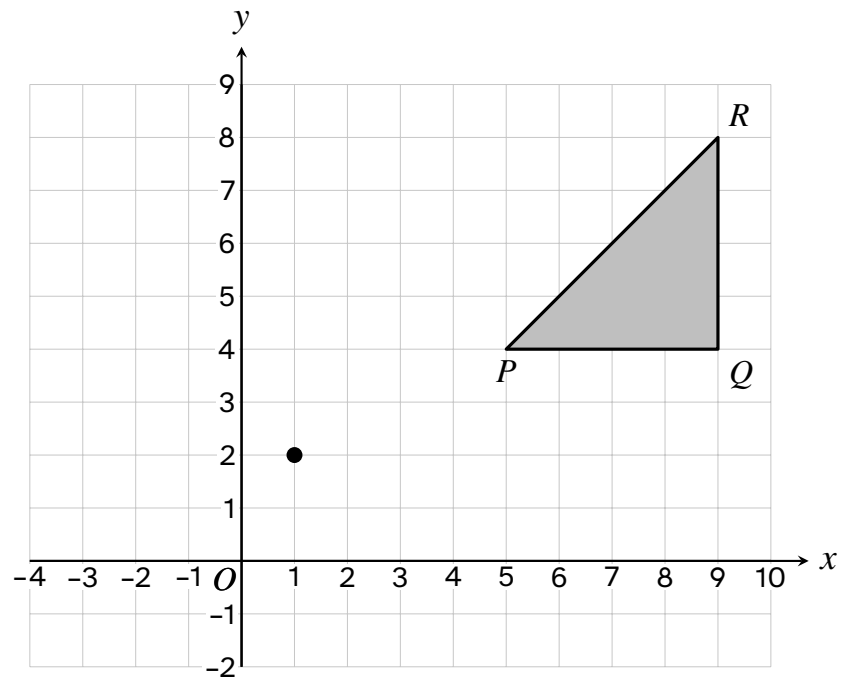
- 4 Shape A is rotated 180° about the point $(2, 1)$
Describe fully a **different** single transformation that also maps shape A onto its image.
[2 marks]

- 5 Enlarge triangle A by scale factor -2 , centre $(0, 0)$



[2 marks]

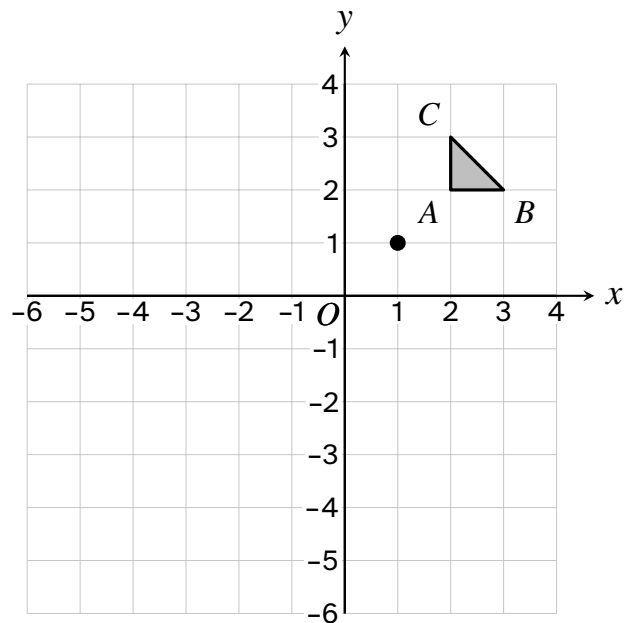
- 6 Enlarge triangle PQR by scale factor $-\frac{1}{2}$ with centre $(1, 2)$



[2 marks]

7 Triangle ABC and the point $(1,1)$ are shown on the grid.

- (a) Enlarge triangle ABC by scale factor -3 , centre $(1,1)$
Label the image D .

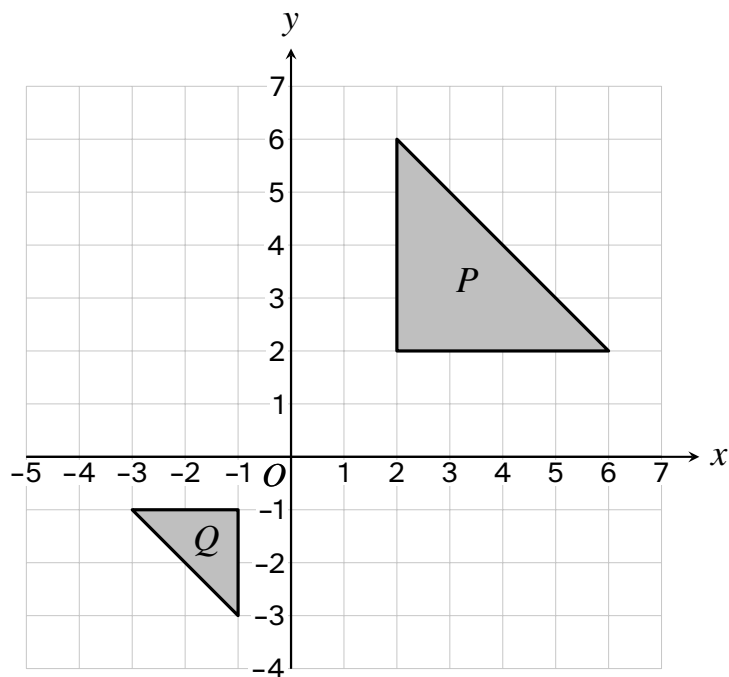


[2 marks]

- (b) Triangle D is rotated 180° about $(1,1)$ to give triangle E .
Describe fully the single transformation that maps triangle ABC onto triangle E .

[3 marks]

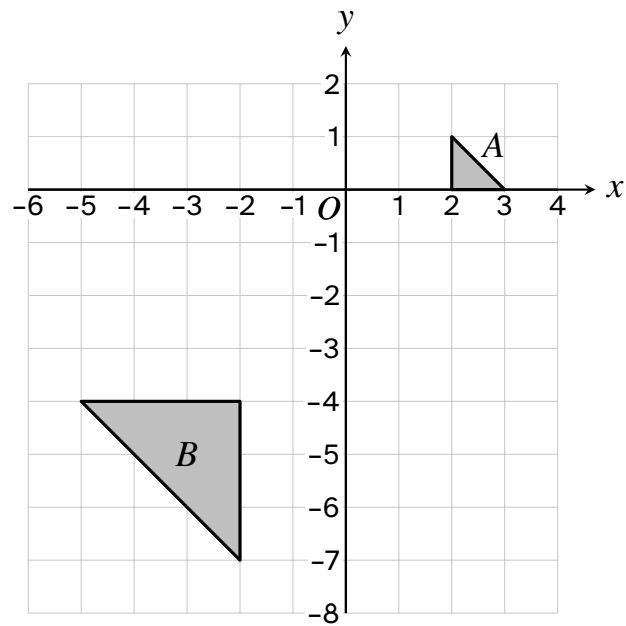
- 8 Triangles P and Q are drawn on the grid.



Describe fully the single transformation that maps triangle P onto triangle Q .

[3 marks]

- 9 Shapes A and B are drawn on the grid.



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

[3 marks]
