

GCSE Maths: Rotation (Foundation): worksheet

GCSE Maths - Transformations and Similarity - Foundation - Lesson 21.2

Name: _____

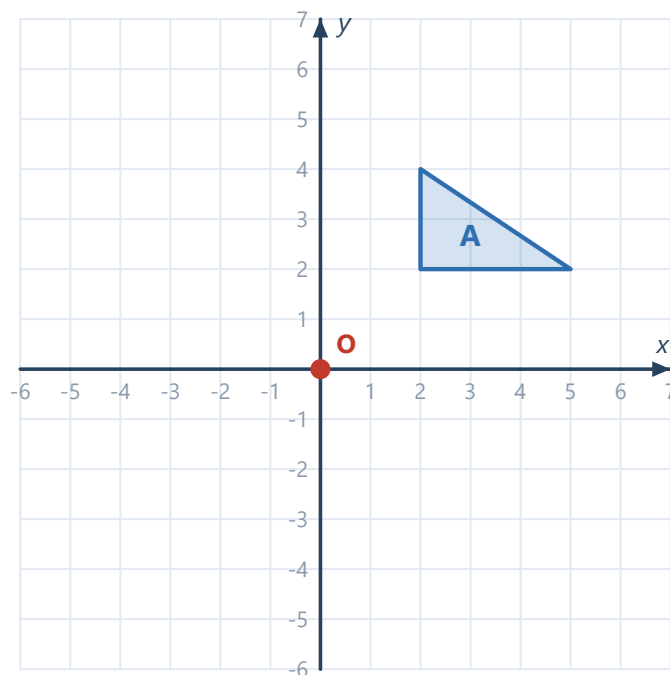
Date: _____

Score: _____

15 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch21-transformations-congruence-similarity/foundation/rotation/

Exercise 21B Rotation Non-calculator

- 1 Shape A has vertices at (2, 2), (5, 2), (2, 4). Rotate A about the origin O(0, 0) and write down the coordinates of the vertices of the image.



- (a) 90° clockwise

Answer: _____

- (b) 180°

Answer: _____

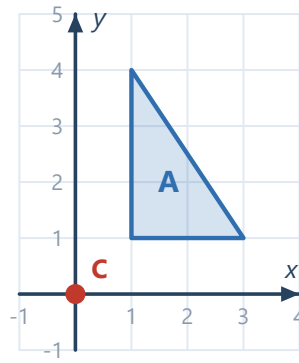
- (c) 90° anticlockwise

Answer: _____

- (d) 270° clockwise

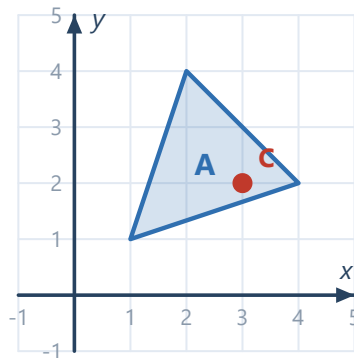
Answer: _____

- 2 Rotate shape A through 90° clockwise about the point C (0, 0). Write down the coordinates of the vertices of the image B. A has vertices at (1, 1), (3, 1), (1, 4).



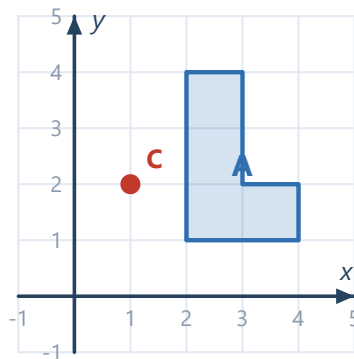
Answer:

- 3** Rotate shape A through 180° about the point C (3, 2). Write down the coordinates of the vertices of the image B. A has vertices at (1, 1), (4, 2), (2, 4).



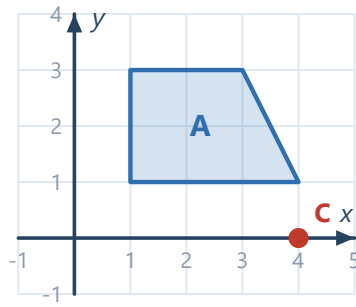
Answer:

- 4** Rotate shape A through 90° anticlockwise about the point C (1, 2). Write down the coordinates of the vertices of the image B. A has vertices at (2, 1), (4, 1), (4, 2), (3, 2), (3, 4), (2, 4).



Answer:

- 5** Rotate shape A through 90° clockwise about the point C (4, 0). Write down the coordinates of the vertices of the image B. A has vertices at (1, 1), (4, 1), (3, 3), (1, 3).



Answer:

- 6** Write down the image of the point P(4, 1) when it is rotated about the origin through:

(a) 90° clockwise

Answer:

(b) 180°

Answer:

(c) 90° anticlockwise

Answer:

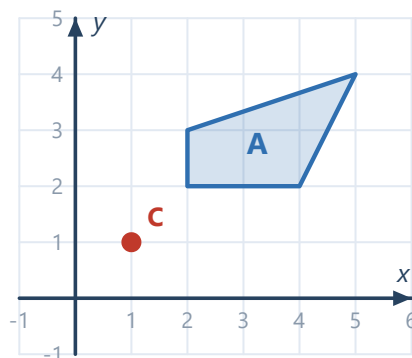
(d) 270° anticlockwise

Answer:

- 7** The point P(2, 3) is rotated 90° anticlockwise about the centre C(1, 1). Work out the coordinates of the image of P.

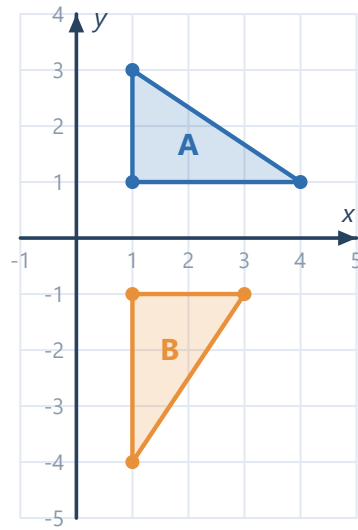
Answer:

- 8** Shape A has vertices at (2, 2), (4, 2), (5, 4), (2, 3). One of the vertices is the centre of rotation C(1, 1). Rotate A 90° clockwise about C and write down the vertices of the image.



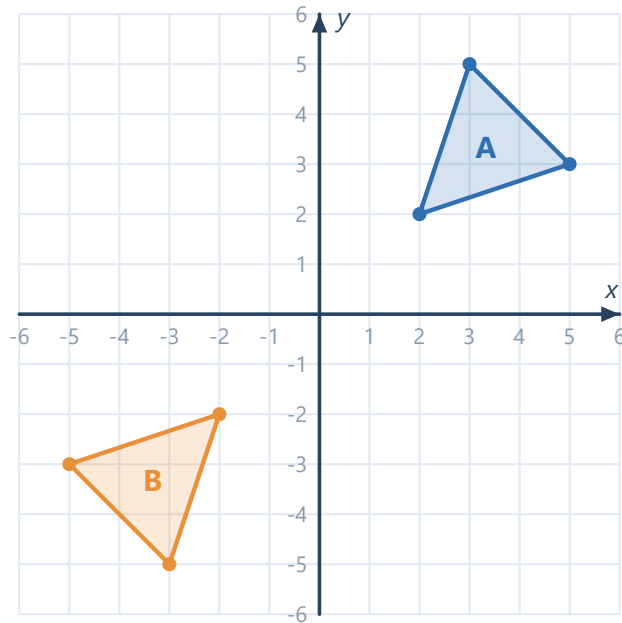
Answer:

- 9** Describe fully the single transformation that maps A onto B.



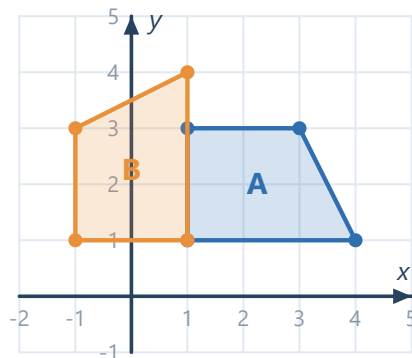
Answer:

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



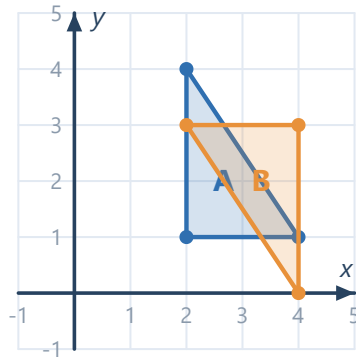
Answer:

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



Answer:

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



Answer:

- 13** Ben says: "Rotating the point (3, 1) through 90° clockwise about the origin gives $(-1, 3)$." Is he right? Explain.

Answer:

- 14** The point P(2, 5) is rotated about the origin to P'(5, -2). Describe the rotation fully.

Answer:

- 15** A point is rotated 90° clockwise about the origin, and then the image is rotated 90° clockwise about the origin again. Show that the result is the same as one rotation of 180° about the origin. Use the point (3, 1).

Answer:
