

GCSE Maths: Enlargement (Foundation): worksheet

GCSE Maths - Transformations and Similarity - Foundation - Lesson 21.4

Name: _____

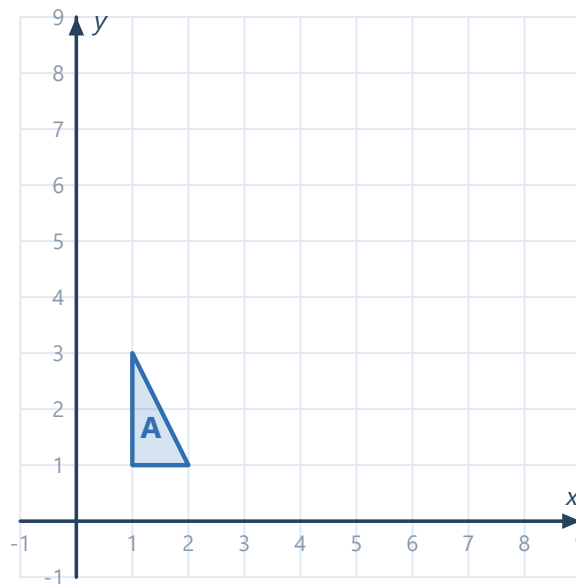
Date: _____

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/enlargement/

Exercise 21D Enlargement Non-calculator

- 1 Shape A has vertices at (1, 1), (2, 1), (1, 3). Enlarge A and write down the vertices of the image.



- (a) scale factor 2, centre (0, 0)

Answer: _____

- (b) scale factor 3, centre (0, 0)

Answer: _____

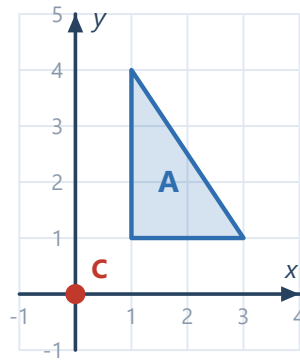
- (c) scale factor 2, centre (1, 1)

Answer: _____

- (d) scale factor 3, centre (0, 1)

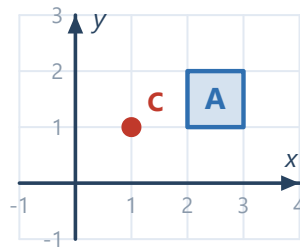
Answer: _____

- 2 Enlarge shape A with scale factor 2 and centre C (0, 0). Write down the coordinates of the vertices of the image B. A has vertices at (1, 1), (3, 1), (1, 4).



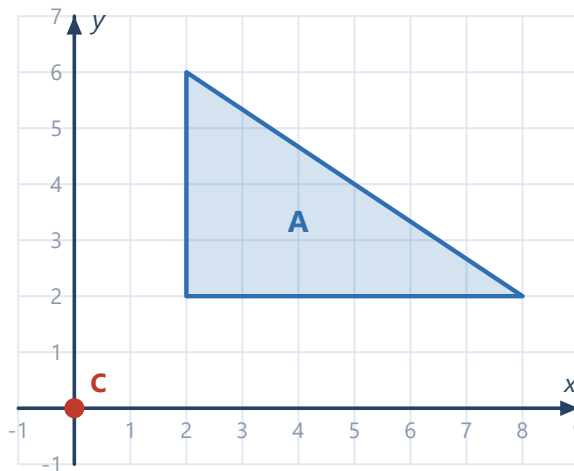
Answer:

- 3** Enlarge shape A with scale factor 3 and centre C (1, 1). Write down the coordinates of the vertices of the image B. A has vertices at (2, 1), (3, 1), (3, 2), (2, 2).



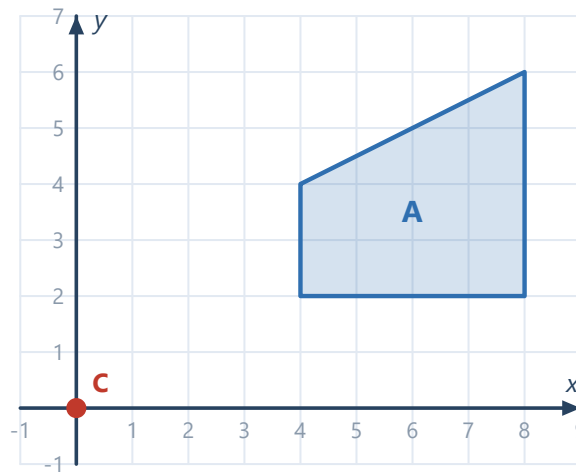
Answer:

- 4** Enlarge shape A with scale factor $\frac{1}{2}$ and centre C (0, 0). Write down the coordinates of the vertices of the image B. A has vertices at (2, 2), (8, 2), (2, 6).



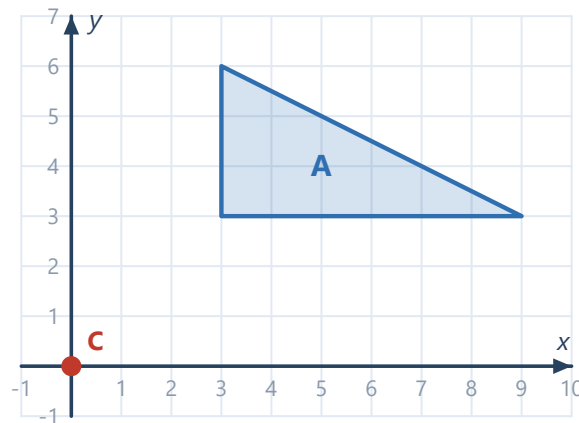
Answer:

- 5** Enlarge shape A with scale factor $\frac{1}{2}$ and centre C (0, 0). Write down the coordinates of the vertices of the image B. A has vertices at (4, 2), (8, 2), (8, 6), (4, 4).



Answer:

- 6 Enlarge shape A with scale factor $\frac{1}{3}$ and centre C (0, 0). Write down the coordinates of the vertices of the image B. A has vertices at (3, 3), (9, 3), (3, 6).



Answer:

- 7 Find the image of each point under the enlargement given.

(a) P(4, 2): scale factor 3, centre (0, 0)

Answer:

(b) P(4, 2): scale factor $\frac{1}{2}$, centre (0, 0)

Answer:

(c) P(4, 2): scale factor 2, centre (1, -1)

Answer:

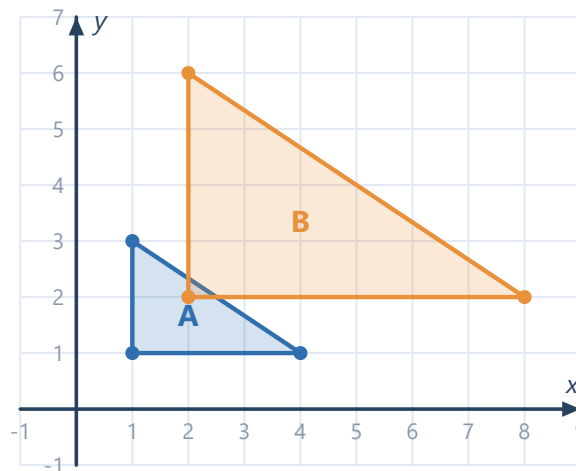
(d) P(4, 8): scale factor $\frac{1}{4}$, centre (0, 0)

Answer:

- 8 A photograph is 10 cm by 15 cm. It is enlarged with a scale factor of 2.5. Work out the length and width of the enlarged photograph.

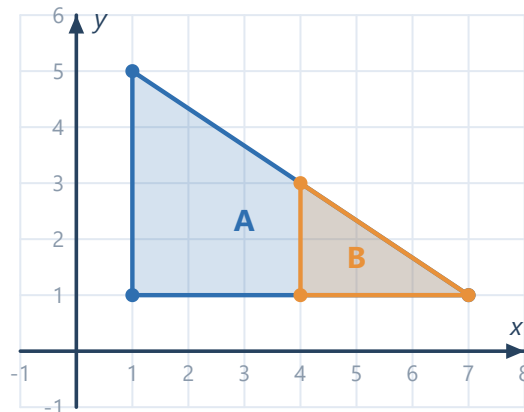
Answer:

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



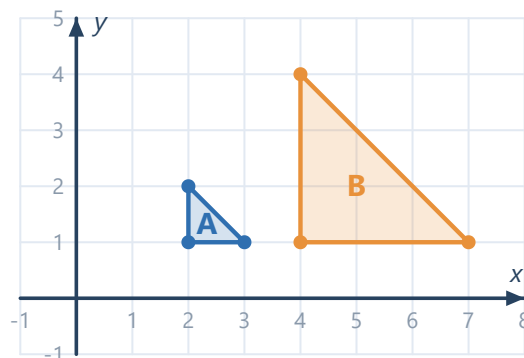
Answer:

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 Sam enlarges triangle A with vertices (1, 1), (2, 1), (1, 3) by scale factor 3 about the origin. He gets the image with vertices (4, 4), (5, 4), (4, 6). Explain his mistake and write down the correct image.

Answer:

- 13** Tilly says: “A scale factor of $\frac{1}{2}$ is not an enlargement because the shape gets smaller.” Is Tilly right? Explain.

Answer:

- 14** Triangle A has sides 3 cm, 4 cm and 5 cm. It is enlarged with scale factor 2 to give triangle B. Show that B is also a right-angled triangle.

Answer:

- 15 Challenge.** Shape A is enlarged with scale factor 2 and centre (3, 1) to give shape B. Shape B is then enlarged with scale factor $\frac{1}{2}$ and the same centre to give shape C. Where is shape C? Use the point (5, 4) on A to explain.

Answer: