Enlargements using coordinates/digital geometry

6 questions | 15 marks

Equivalent correct methods earn the corresponding marks.

1. Enlarge P(2,−3) by factor 2 from the origin. [2 marks]

2×2=4; 2×(−3)=−6.

Answer: P′(4,−6).

2. Enlarge Q(−6,4) by factor 1/2 from the origin. [2 marks]

Halve both coordinates.

Answer: Q′(−3,2).

3. Enlarge A(1,0), B(3,0), C(1,2) by factor 3 from the origin. [3 marks]

Multiply every coordinate by 3.

Both perpendicular sides triple.

Answer: A′(3,0), B′(9,0), C′(3,6).

4. Centre C is (1,−1). Enlarge P(3,2) by factor 2. [3 marks]

P−C=(2,3).

Double to (4,6), then add C to get (5,5).

Answer: P′(5,5).

5. An enlargement from the origin maps (2,3) to (6,9). Find k. [2 marks]

6÷2=3 and 9÷3=3. Both coordinates give the same factor.

Answer: 3

6. A student maps (3,1) to (5,3) and calls it factor 2 from the origin. Give the correct image and describe the student's movement. [3 marks]

The correct image doubles both coordinates.

The student added the same displacement to the point.

Answer: Correct image (6,2); the student translated by (2,2).