



## Enlargement

- Enlarging an object with positive and negative scale factors
- Describing enlargements
- Determining scale factors

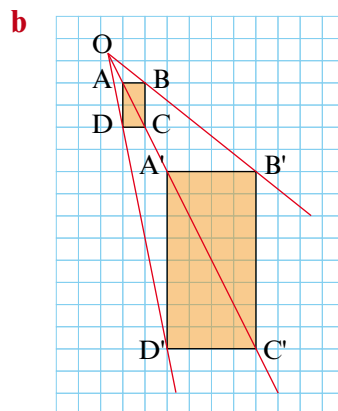
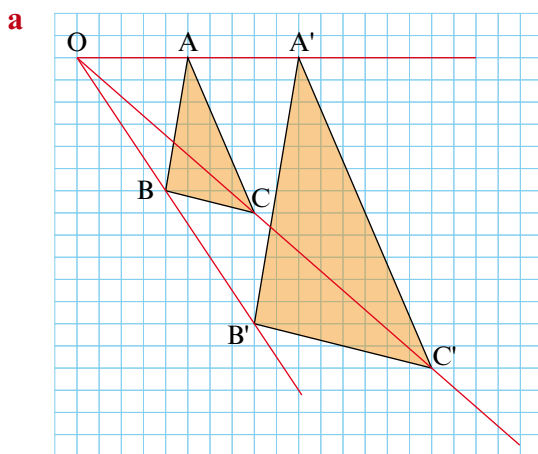
Keywords

You should know

explanation 1a

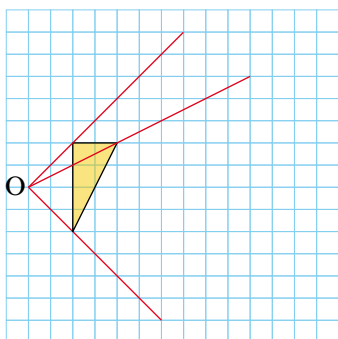
explanation 1b

**1** Calculate each scale factor of enlargement.

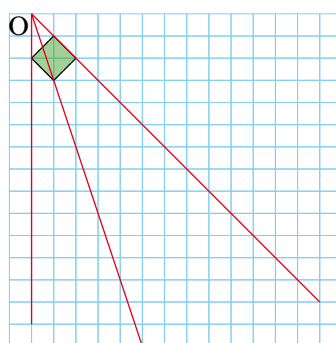


**2** In each diagram, an object and a centre of enlargement, O, are shown. Copy each diagram and enlarge the object by the given scale factor.

**a** Enlargement scale factor 3

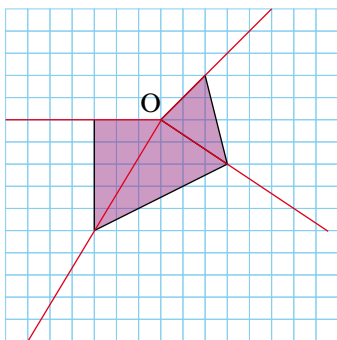


**b** Enlargement scale factor 5

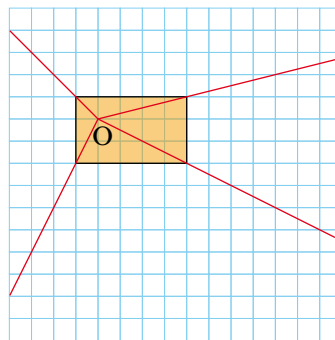


- 3** Copy these diagrams and enlarge each object by the scale factor shown. The centre of enlargement is marked O.

**a** Enlargement scale factor 2



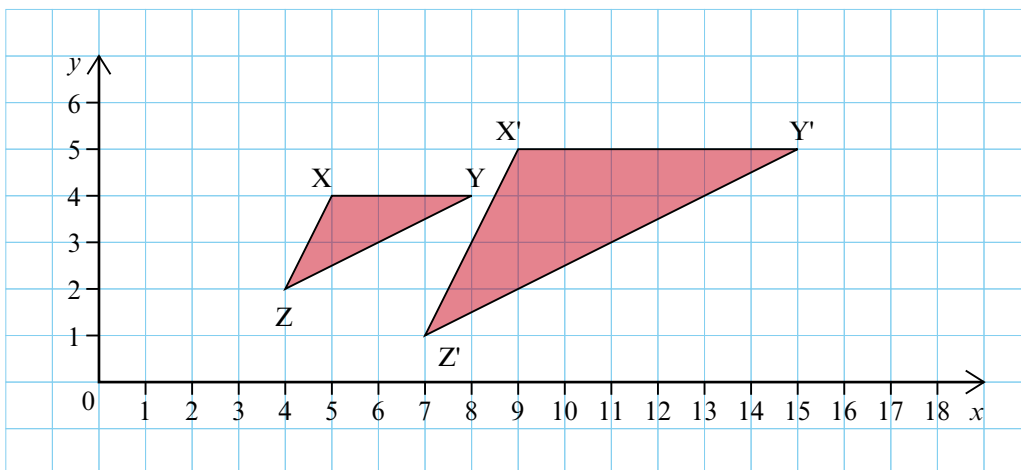
**b** Enlargement scale factor 2



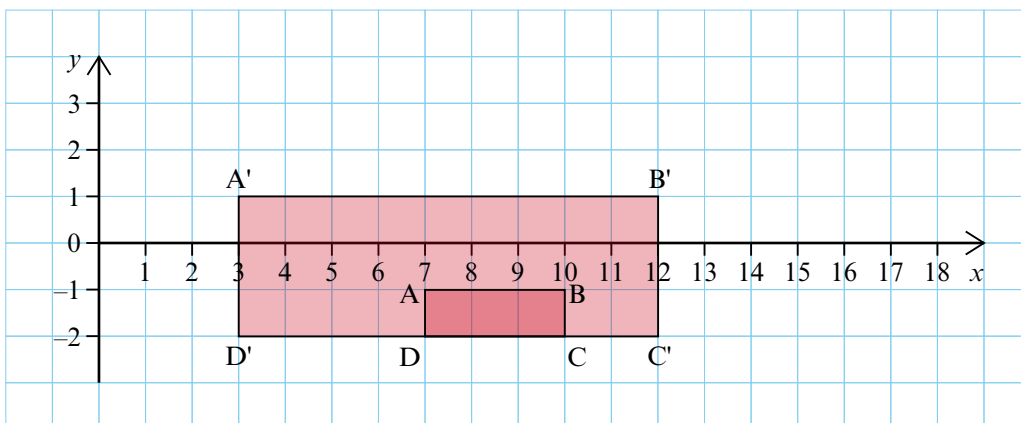
- 4** An object and its image are shown on each of the axes.

- What are the coordinates of the centre of each enlargement?
- What is the scale factor of each enlargement?

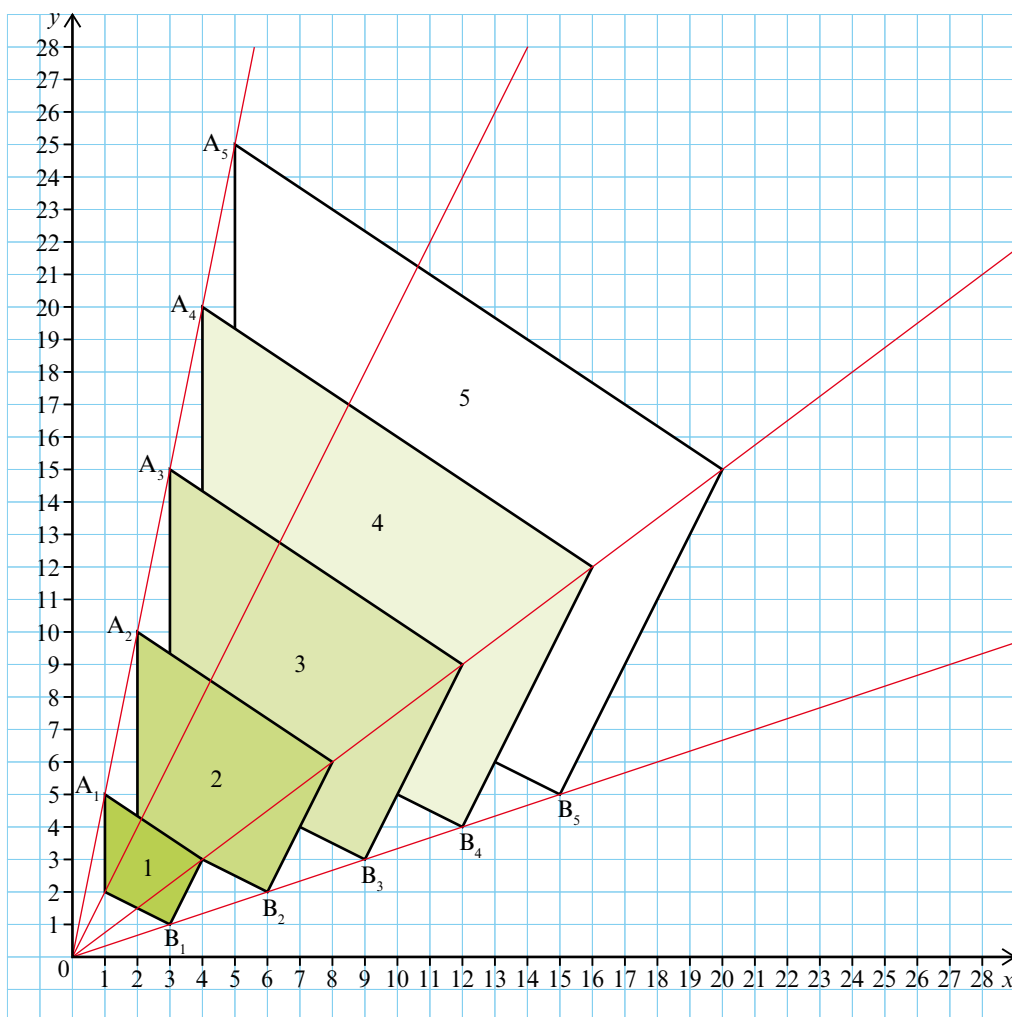
**a**



**b**



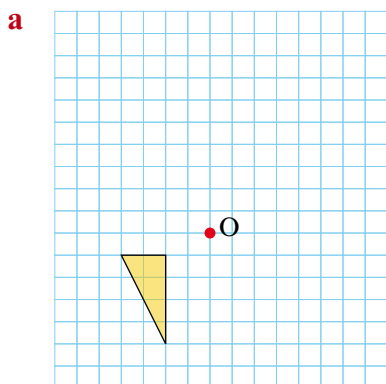
- 5** The diagram below shows object 1 and several enlargements. Image 2 is an enlargement of object 1 by scale factor 2. Image 3 is an enlargement of object 1 by scale factor 3 etc. The centre of enlargement is at the origin.



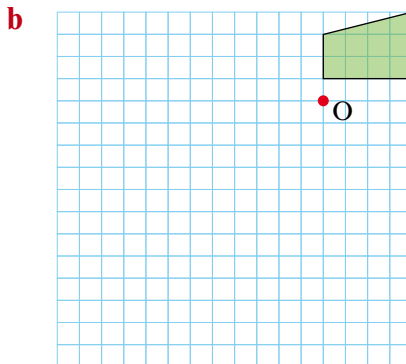
- What are the coordinates of A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, A<sub>4</sub> and A<sub>5</sub>?
- Predict the coordinates of A<sub>6</sub> and A<sub>10</sub>. What are the coordinates of A<sub>n</sub>?
- What are the coordinates of B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub>, B<sub>4</sub> and B<sub>5</sub>?
- Predict the coordinates of B<sub>6</sub> and B<sub>10</sub>. What are the coordinates of B<sub>n</sub>?
- An image of object 1 has coordinates (15, 75) for the A vertex. What is the scale factor of the enlargement?
- What do you notice about the length of the sides of object 1 compared to the corresponding sides of the images?
- What do you notice about corresponding angles in object 1 and the images?

## explanation 2

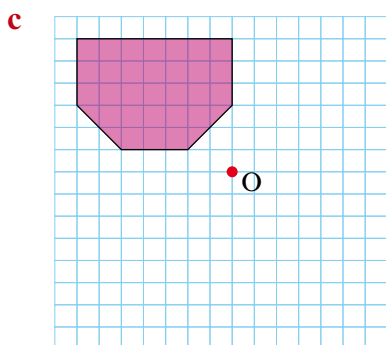
- 6** In each diagram, an object and a centre of enlargement, O, are shown. Copy each diagram and enlarge it by the scale factor stated.



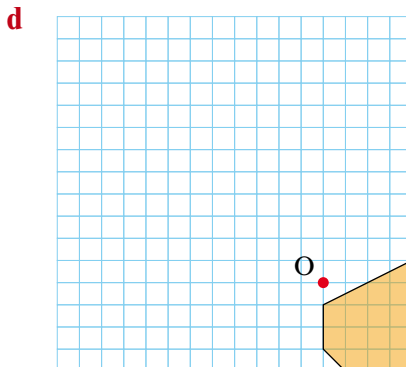
Enlargement scale factor  $-2$



Enlargement scale factor  $-3$



Enlargement scale factor  $-1$



Enlargement scale factor  $-3$

- 7** In these diagrams, shape A is mapped onto image A' by an enlargement. Work out the scale factor of these enlargements.

