Mathematics

Enlargement from a given point

Lesson 3 of 8

Downloadable Resource

Miss Kidd-Rossiter

Try this

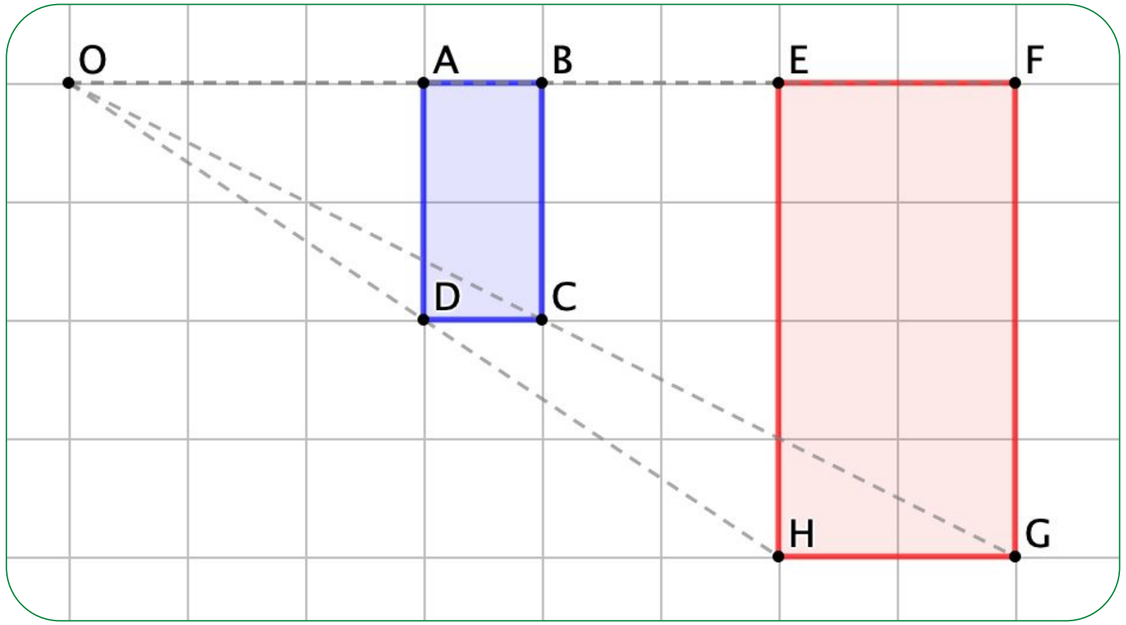
What is the scale factor of enlargement when ABCD is the object and EFGH is the image?

What do you notice about lengths:

OA and OE?

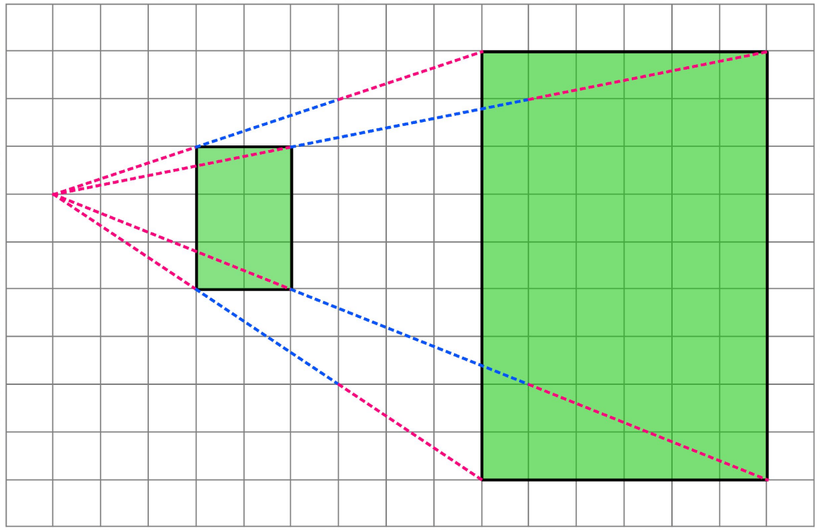
OD and OH?

OB and BF? Why is this the case?

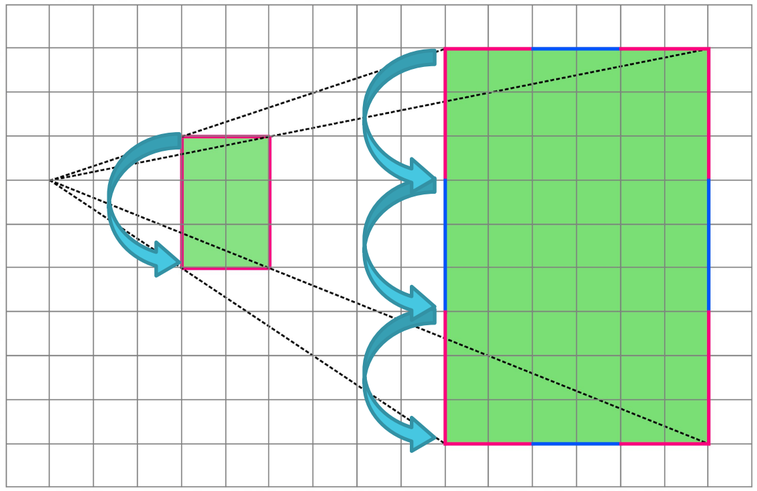


Connect

This is an enlargement with **scale factor 3** because...



Which method would you recommend?

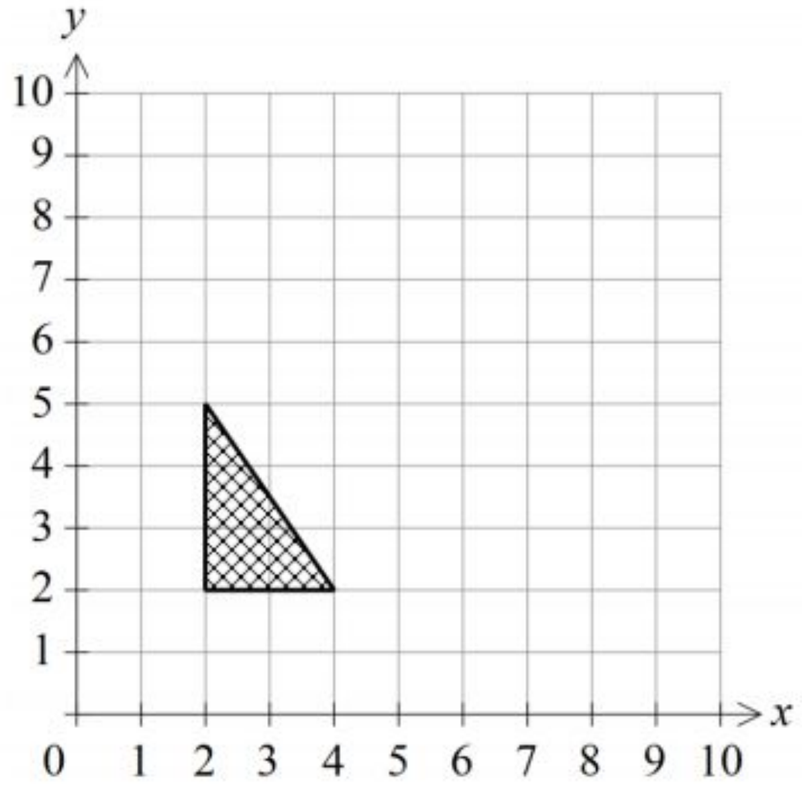


The distance from the centre to a vertex on the image is three times the distance from the centre to the corresponding vertex on the object.

Any length on the image **is three times** the corresponding length on the object.

Independent task

1. Enlarge this shape by scale factor 2, with centre (1, 2).



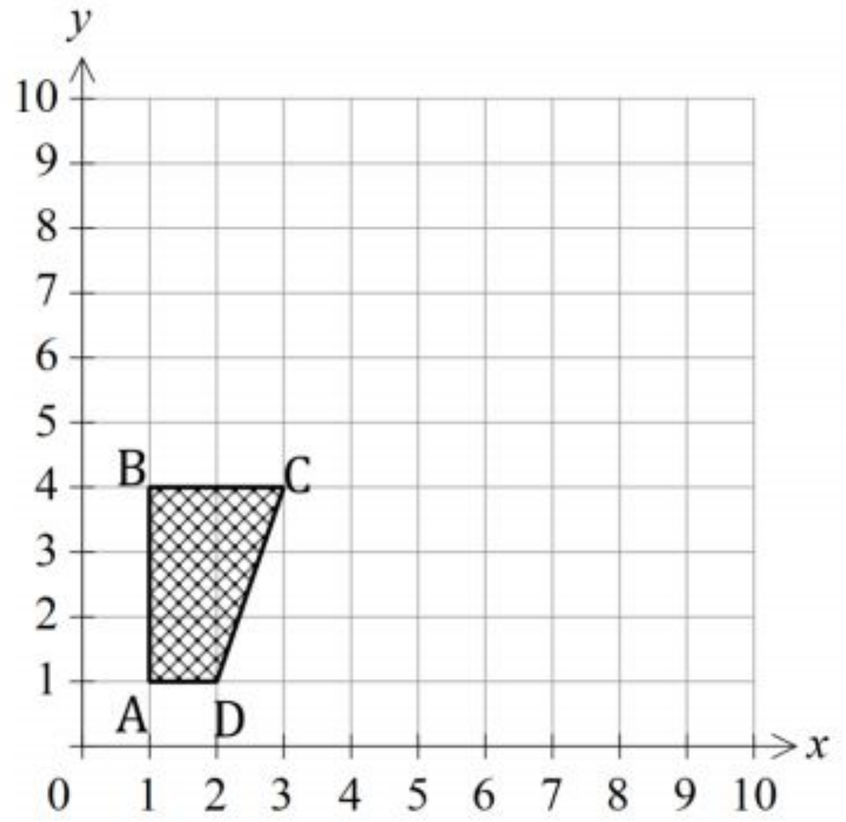
Independent task

2. The diagram shows a quadrilateral ABCD. Give the coordinates of C after an enlargement:

   a. Scale factor 2, centre (0, 0)

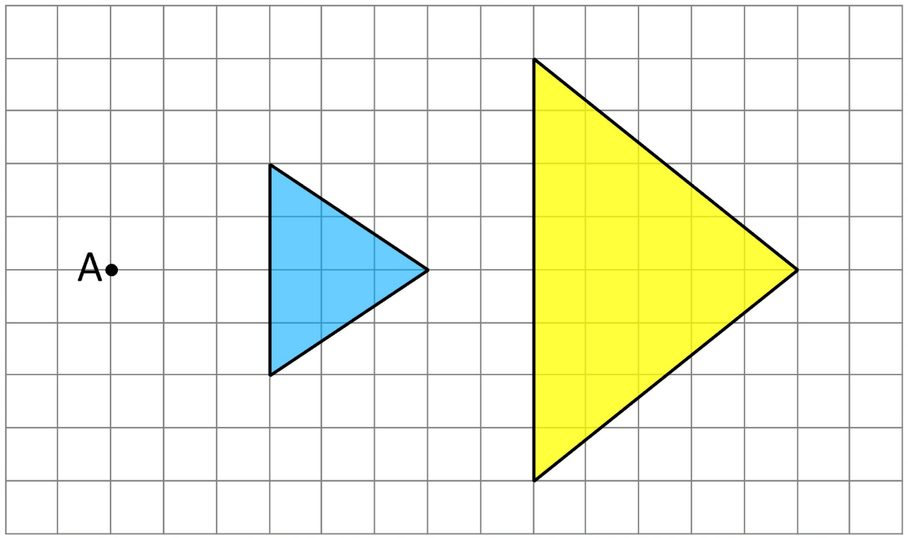
   b. Scale factor 0.5, centre (0, 0)

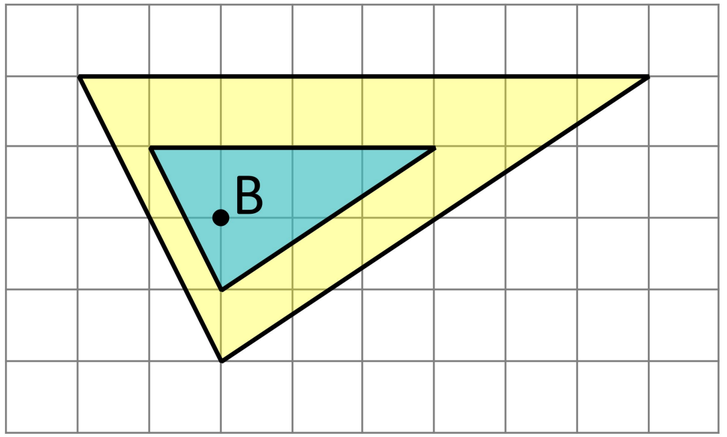
   c. Scale factor 2, centre (1, 2)

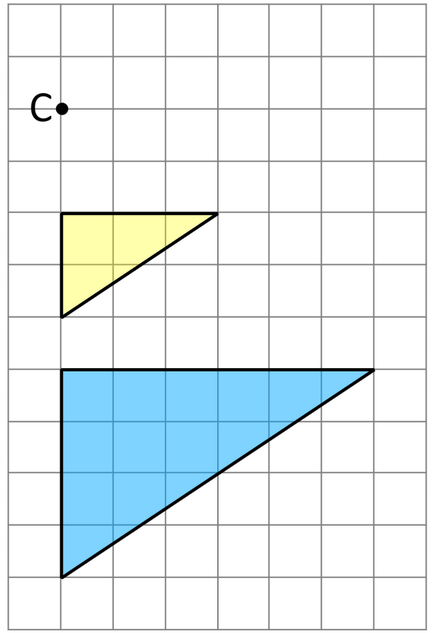


Independent task

3. Antoni thinks that some of the centres of enlargements might be in the wrong places for the below diagrams.
   Is Antoni correct? Where should they be?

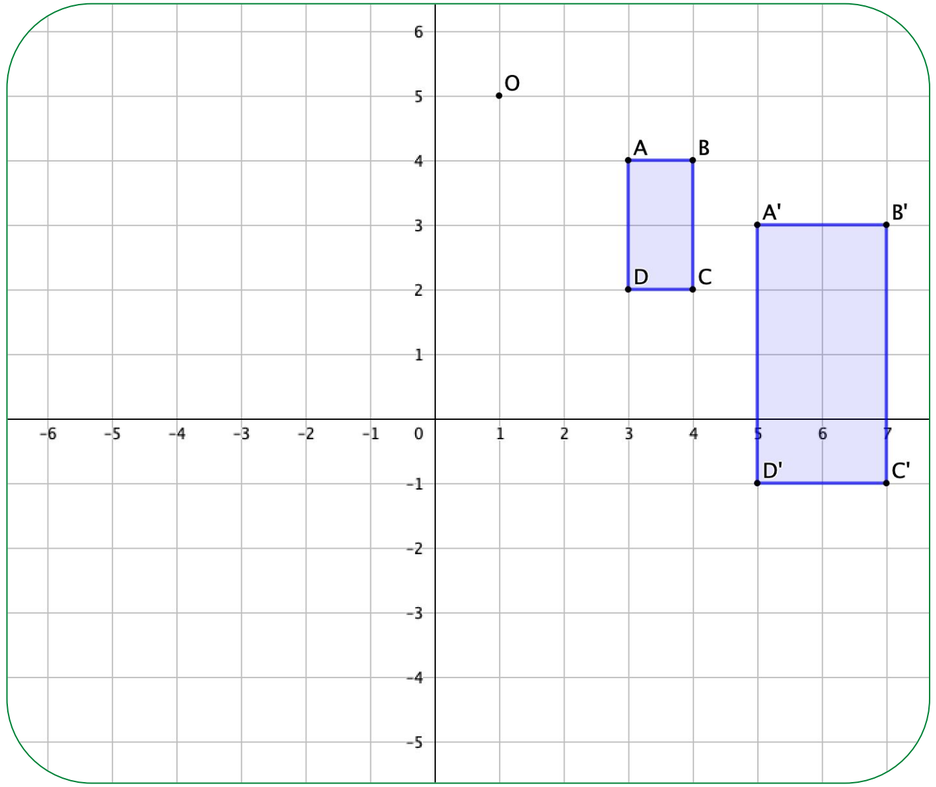






Explore

The image shows rectangle ABCD, enlarged by scale factor 2.5 from the point O.



If the scale factor stays as 2.5, can you find positions for O, so the enlarged rectangle appears in each of the four quadrants?

Imagine point O is moved along the line $y = 5$.
What happens to the points A', B', C' and D' as you move O along this line?

What else can you do by moving the position of O?