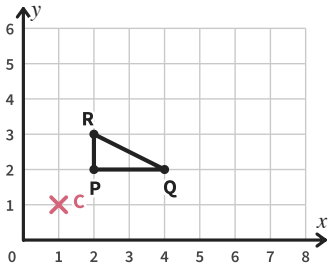
Enlargement from a centre

1

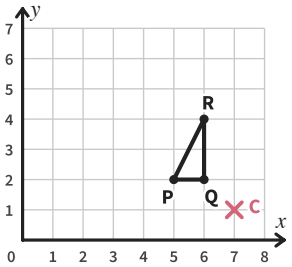
Enlarge the shape by scale factor **2** about the centre **C (1, 1)**.



Vertex	Journey from C	Journey × 2	New vertex
P (2, 2)	right 1, up 1	right 2, up 2	P′ (3, 3)
Q (4, 2)	right 3, up 1		
R (2, 3)	right 1, up 2		

2

Enlarge the shape by scale factor **2** about the centre **C (7, 1)**.

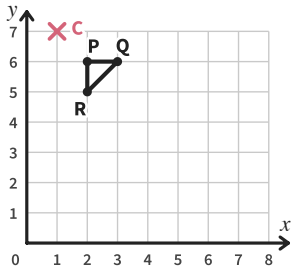


Vertex	Journey from C	Journey × 2	New vertex
P (5, 2)	left 2, up 1		
Q (6, 2)	left 1, up 1		
R (6, 4)	left 1, up 3		

3

Notice the change!

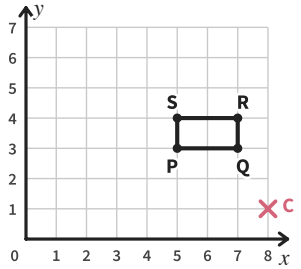
Enlarge the shape by scale factor **3** about the centre **C (1, 7)**.



Vertex	Journey from C	Journey × 3	New vertex
P (2, 6)	right 1, down 1		
Q (3, 6)			
R (2, 5)			

4

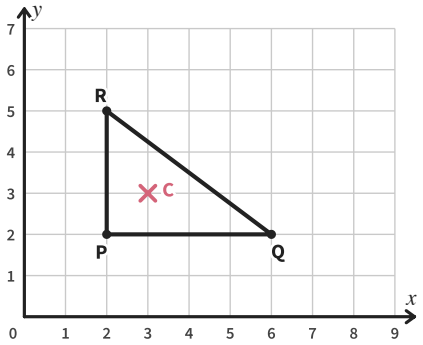
Enlarge the shape by scale factor **2** about the centre **C (8, 1)**.



Vertex	Journey from C	Journey × 2	New vertex
P (5, 3)			
Q (7, 3)			
R (7, 4)			
S (5, 4)			

5

The centre **C (3, 3)** is inside the triangle.
Enlarge it by scale factor **2**.
No table this time.



6

Ella enlarges **P (4, 3)** by scale factor 2 about **C (2, 1)**. She says the new P is (8, 6). Explain her mistake. Find the new P.

journey from C: _____

× 2: _____

New P _____

7

Enlarge the point **(3, 3)** by scale factor 3 about the centre **(1, 2)**.

journey from C: _____

× 3: _____

New point _____

8

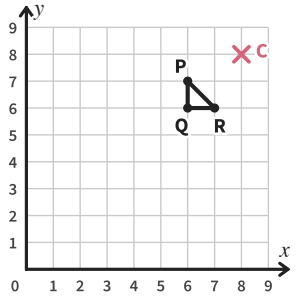
A triangle has sides 3 cm, 4 cm and 5 cm.
It is enlarged by scale factor 3.
Find the lengths of the sides of the image.

Sides _____

Enlargement from a centre *further practice*

9

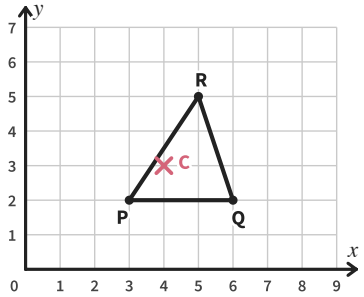
Enlarge the triangle by scale factor 3 about C (8, 8).



Answer _____

10

Enlarge the triangle by scale factor 2 about C (4, 3), inside it.



Answer _____

11

A triangle has corners (3, 5), (5, 4) and (4, 6). It is enlarged by scale factor 2 about (2, 3). Find the new corners.

Answer _____

12

A phone case design is a rectangle 5 cm by 2 cm. It is enlarged by scale factor 3. Find the perimeter of the enlargement.

Answer _____

13

An enlargement by scale factor 2 about (1, 1) takes the point A to (7, 5). Find A.

Answer _____

14

Kai enlarges a rectangle 2 cm by 1 cm by scale factor 3. He draws a rectangle 6 cm by 2 cm. Is he right? Explain.

Answer _____

15

On a garden plan, a flower bed is a triangle with corners (2, 2), (4, 2) and (2, 3). It is enlarged by scale factor 3 about the tap at (1, 1). Find the corners of the new bed.

Answer _____

16

Lena says: “Enlarging about (0, 0) is the same as multiplying the coordinates.” Is she right? Explain.

Answer _____