Guide to: Enlargements

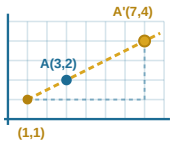
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Explanation:

To **describe an enlargement** fully (3 marks), state: (1) the word **enlargement**, (2) the **scale factor** ($\frac{\text{Image length}}{\text{Object length}}$), and (3) the coordinates of the **centre of enlargement** (found by drawing straight ray lines through corresponding vertices until they cross).

To perform an enlargement from a centre, count the horizontal and vertical steps from the **centre** to each vertex, multiply both steps by the scale factor, and plot the new vertices starting from the **centre**. A fractional scale factor (e.g. $\frac{1}{2}$) makes the shape smaller.

Example 1: Enlarge point *A***(3, 2)** by **scale factor 3** with centre **(1, 1)**.



From (1,1): **2 right, 1 up**.
× 3 → **6 right, 3 up**.
Answer: (7, 4)

Example 2: Shape *P* (base 4, top (3,5)) maps to *Q* (base 2, top (2,3)) with rays meeting at (1,1). Describe the transformation.



SF = $\frac{2}{4} = \frac{1}{2}$
Centre = **(1, 1)**
Enlargement, SF $\frac{1}{2}$, centre (1, 1)

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