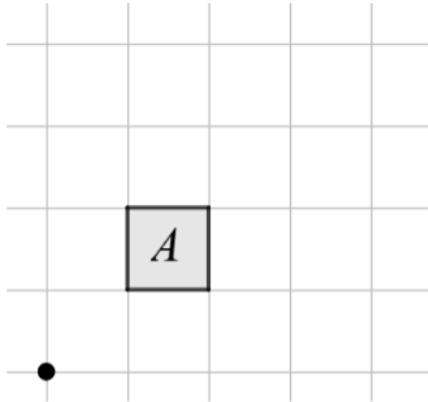# Enlargements With Centre of Enlargement
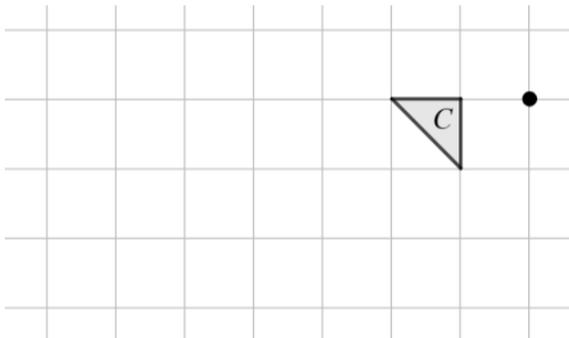
www.m4ths.com

(1) (a) Enlarge shape A below by a scale factor of 2 using the centre of enlargement given. Label the new shape B.
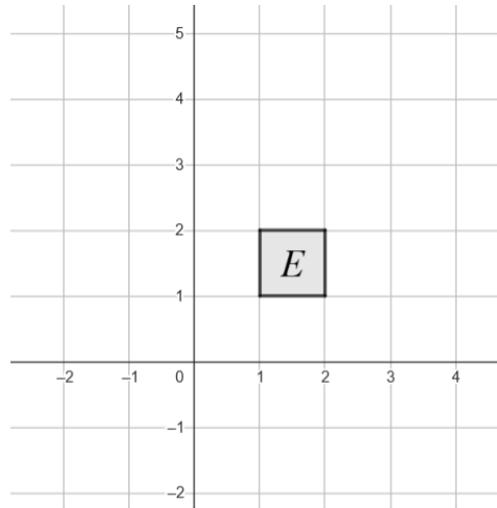

(b) What is the scale factor of the enlargement of shape B to shape A?

(2) (a) Enlarge shape C below by a scale factor of 3 using the centre of enlargement given. Label the new shape D.
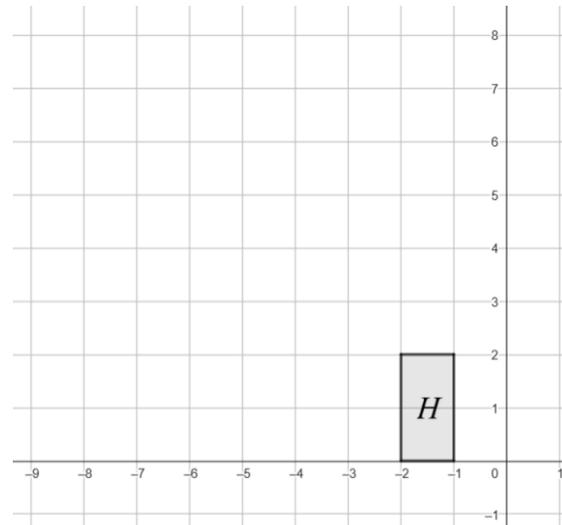

(b) What is the scale factor of the enlargement of shape D to shape C?

(3) (a) Enlarge shape E by SF 2 centre $(0,0)$ and label the shape F.

(b) Enlarge shape E by SF 3 centre $(2,1)$ and label the shape G.

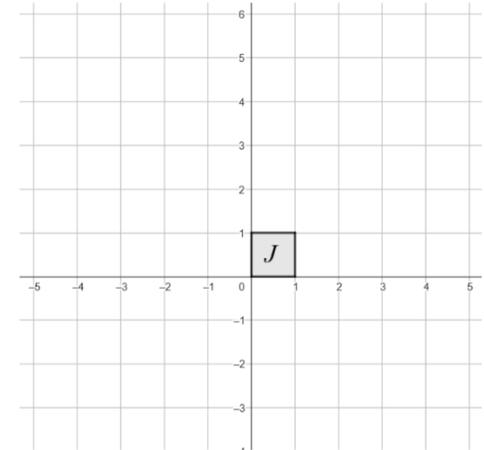(4) Enlarge shape H by SF 4 centre $(0,0)$ and label the shape I.

(5) (a) Enlarge shape J by SF 2 centre $(1, -1)$ and label the shape K.
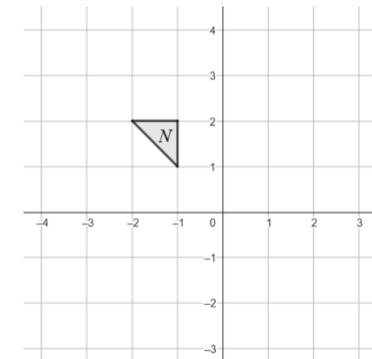
(b) Enlarge shape J by SF 2 centre $(-1,1)$ and label the shape L.

(c) Enlarge shape J by SF 3 centre $(1, -1)$ and label the shape M.

(d) Show that enlarging shape J by SF 4 centre $(-2, -2)$ makes the shape go off the grid.
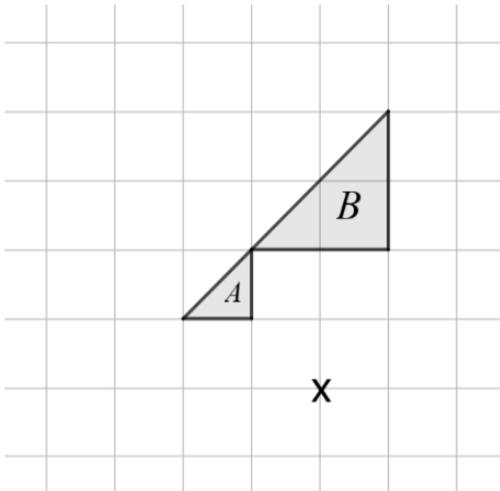

(6) Enlarge shape N by SF 5 centre $(-2,2)$ and label it P

(7) Shape B is an enlargement of shape A.
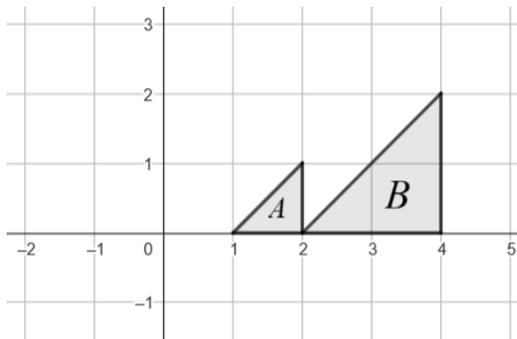(a) Write down the scale factor of the enlargement.
(b) Use guidelines to find the centre of enlargement.

(c) Shape C is an enlargement of shape A SF 2 centre ×. Draw shape C on the grid.
(d) Describe fully, the single transformation that maps shape C to B.
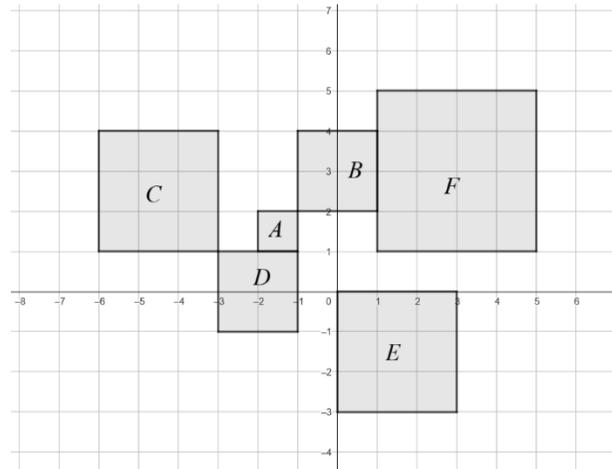
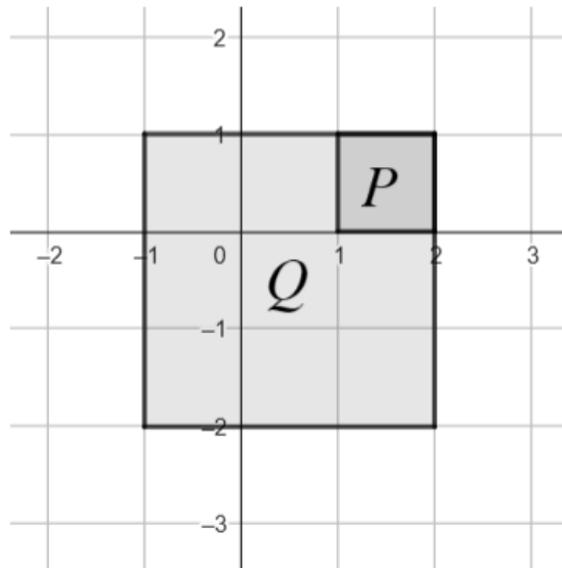(8) State fully the single transformation that maps shape A to B.

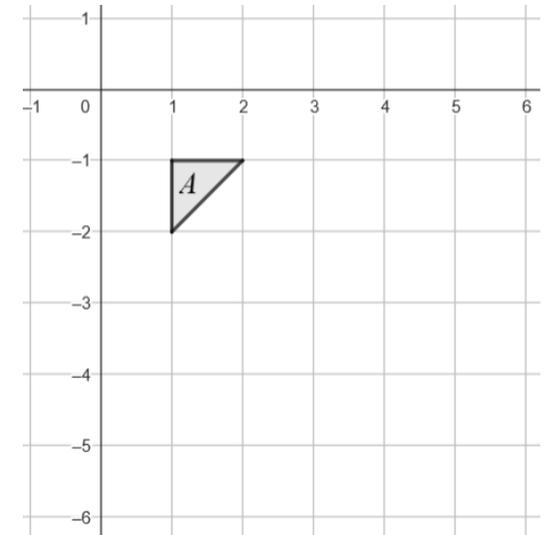(9) **YOU MUST USE PENCIL FOR THIS QUESTION FOR THE GUIDELINES**
State fully the single transformation that maps shape A to each of the other shapes.

(10) State fully the single transformation that maps shape P to shape Q.

(11) (a) Enlarge shape A by SF 2 centre $(0,0)$ and label the new shape B.

(b) Translate shape B by the vector $\begin{pmatrix} -1 \\ 0 \end{pmatrix}$ and label the shape C.
(c) State fully the single transformation that maps shape A to shape C.

(12) State fully the single transformation that maps shape B to shape A.