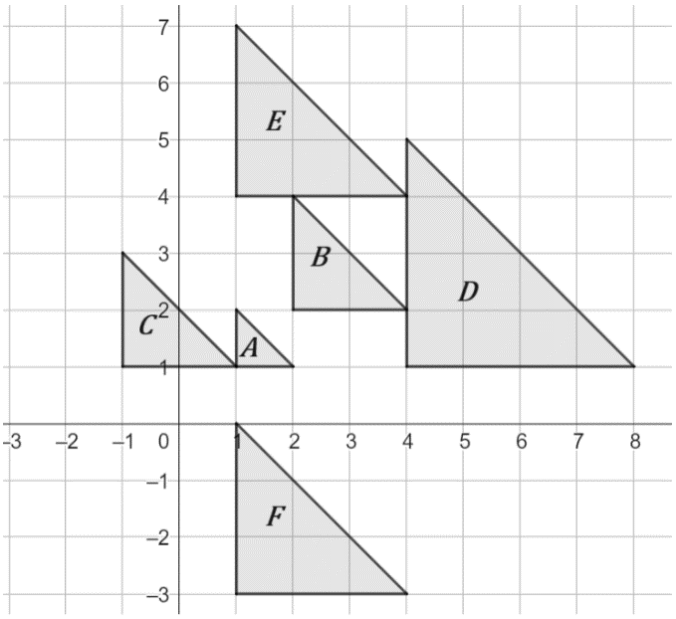
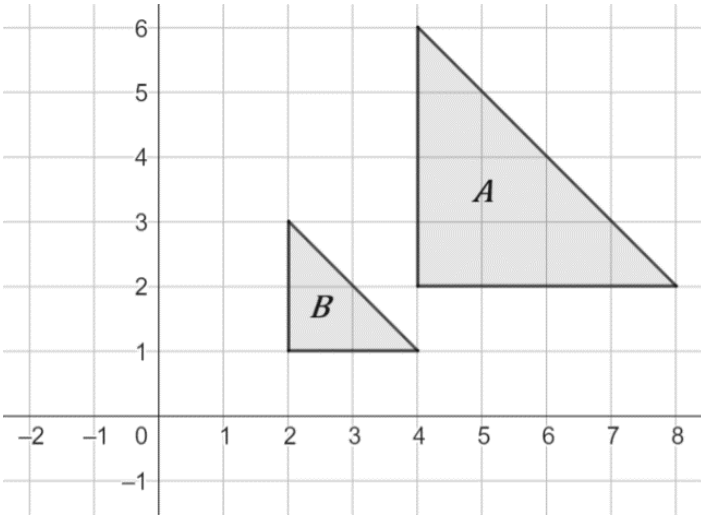
Naming Transformations (Including a Centre of Enlargement) – www.m4ths.com

(1) Describe the enlargement below that maps Shape A to each of the other shapes. You must include the centre of enlargement.

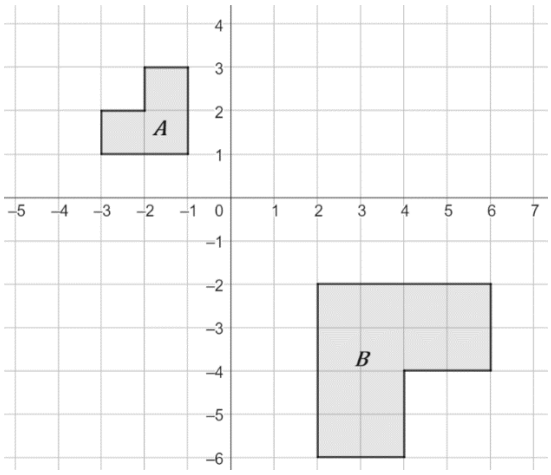


(2) (a) State fully the single transformation that maps Shape A to Shape B.



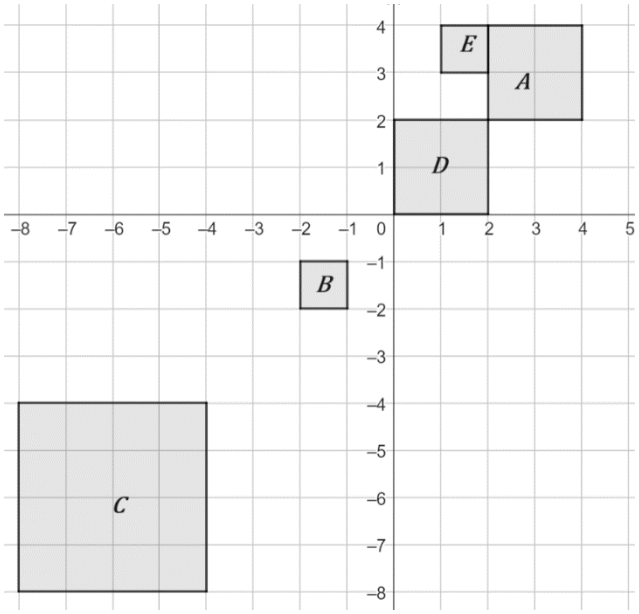
(b) State fully the single transformation that maps Shape B to Shape A.
(c) Draw the shape C such that the transformation from Shape B to C is an enlargement $SF\ \frac{1}{4}$, centre $(4,2)$
(d) A triangle D is drawn with vertices $(5,3)$, $(13,3)$ and $(5,11)$. Describe fully the single transformation that maps A to D.
(e) Draw the triangle E which is an enlargement of A by scale factor -1, centre $(3,1)$.

(3) (a) Explain why the diagram below shows an enlargement with a negative scale factor

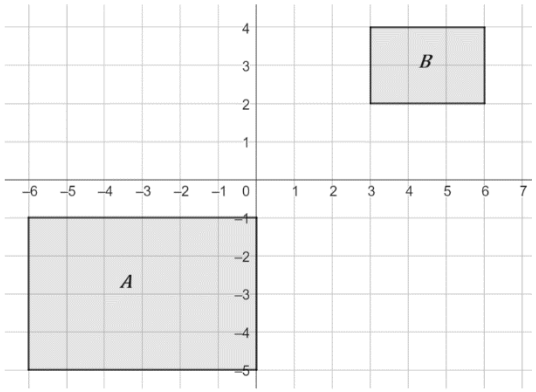


(b) State fully the single transformation that maps Shape A to Shape B.
(c) State fully the single transformation that maps Shape B to Shape A.

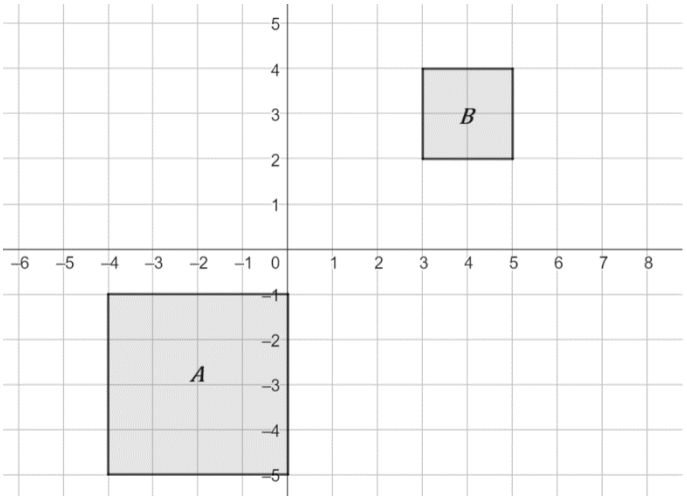
(4) State fully, the single transformation that maps Shape A to each of the other shapes.



(5) State fully, the single transformation that maps Shape A to Shape B

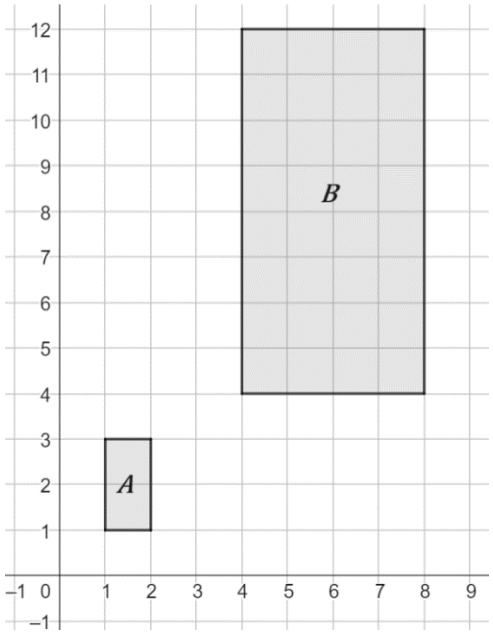


(6) The diagram below shows Shape A and Shape B.
Shape A is enlarged by scale factor S centre $(-2,1)$ and then **reflected** to give Shape B.



(a) Write down the value of S
(b) Describe the reflection.
(c) State fully a different transformation that could have been applied instead of the reflection on the second transformation.

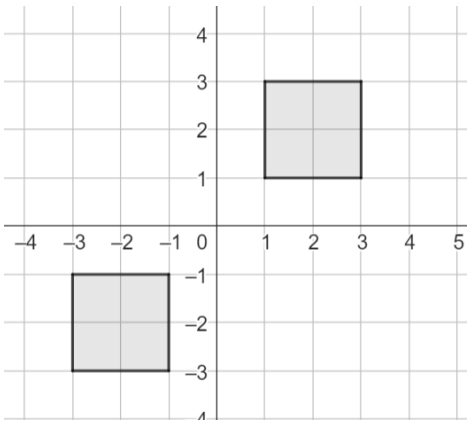
(7) The diagram below shows Shape A and Shape B.



(a) Describe fully the single transformation that maps Shape A to B.
(b) Describe fully the single transformation that maps Shape B to A.
(c) Shape B is enlarged **twice** with centre of enlargement $(0,0)$ to give Shape A.
Write down the possible scale factors of the two transformations.

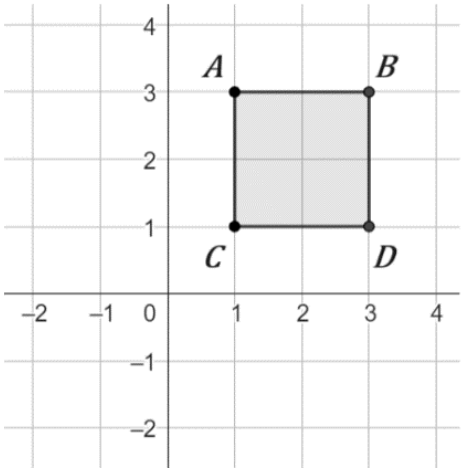
(8) The points $A(3,1)$, $B(5,1)$ and $C(3,4)$ are mapped to the points A', B' and C' under different transformations. A', B' and C' are the 'images of' A, B and C respectively.
Describe fully, the single transformation that maps the points A, B and C to each of the following:
(a) $A'(4,-2)$, $B'(8,-2)$ and $C'(4,4)$
(b) $A'(-1,-3)$, $B'(-7,-3)$ and $C'(-1,-12)$

(9) Two congruent squares are shown below.



Describe fully, 3 different transformations, that would move one of the shapes to the other.

(10) The diagram below shows the square $ABCD$.



State which points (A, B, C or D) will remain invariant under the following transformations.
(a) A reflection in the line $y = x$
(b) A rotation 180^0, centre $(1,1)$.
(c) A reflection in the line with equation $x = 3$
(d) An enlargement $SF -1$, centre $(3,3)$.
(e) A reflection in the line $x + y = 4$
(f) A reflection in the line $y = 1$
(g) A rotation 180^0, centre $(2,2)$.