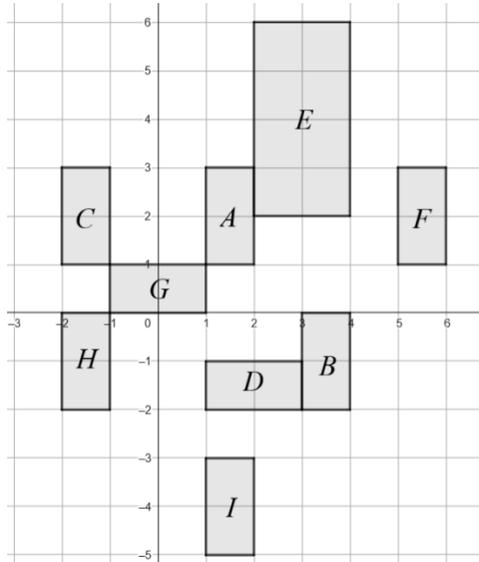


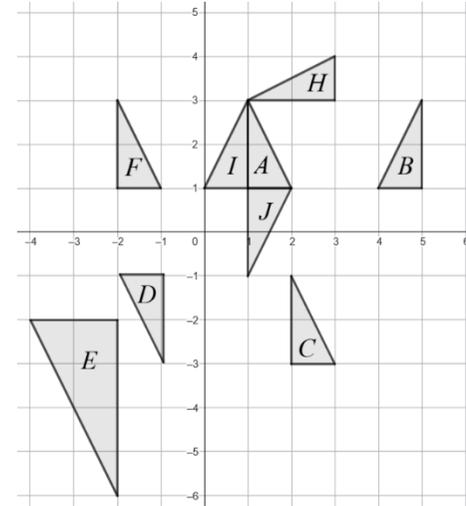
Describing Transformations – Including Enlargements – www.m4ths.com

(1) Complete each sentence describing the transformations below.



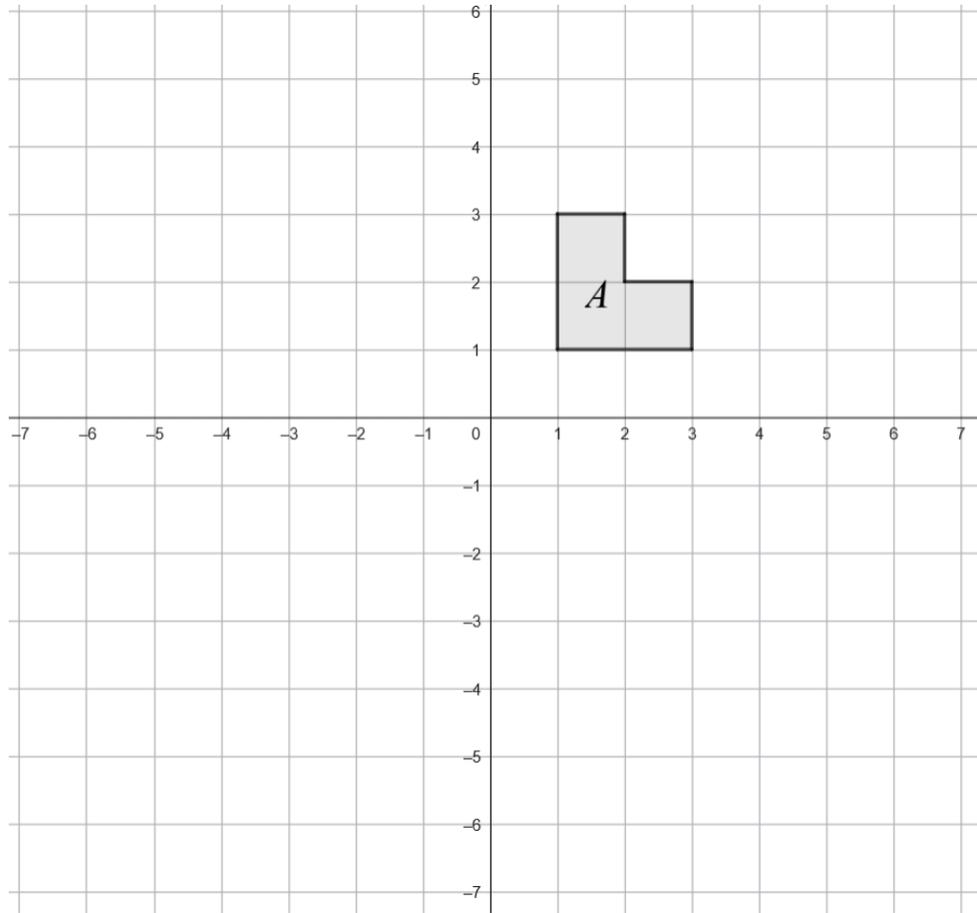
- (a) Shape *A* to *B* is a translation by the vector (\quad)
- (b) Shape *A* to shape *C* is a reflection in the _____
- (c) Shape *A* to *D* is a rotation _____ degrees _____ centre $(0,0)$.
- (d) Shape *A* to shape *E* is an enlarge scale factor _____, centre _____
- (e) Shape *A* to shape *F* is a _____ in the line $x = 3.5$
- (f) Shape *A* to *G* is a rotation _____ degrees _____ centre $(0.5, 0.5)$
- (g) Shape *A* to *H* is a _____ by the vector (\quad)
- (h) Shape *A* to shape *I* is a reflection in the line _____ **OR** a translation by the vector (\quad) .

(2) Describe **FULLY** each transformation below



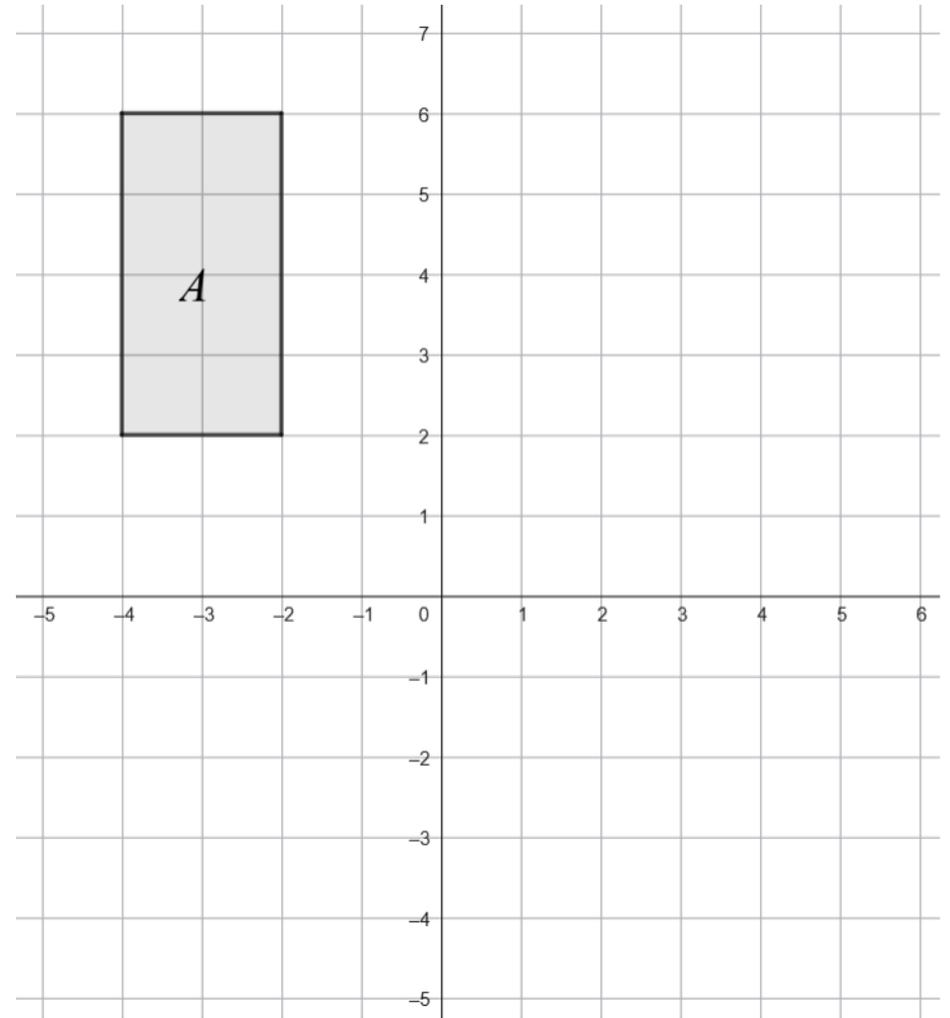
- (a) Shape *A* to shape *B* _____
- (b) Shape *A* to shape *C* _____
- (c) Shape *A* to shape *D* _____
- (d) Shape *A* to shape *E* _____
- (5) Shape *A* to shape *F* _____
- (6) Shape *A* to shape *H* _____
- (7) Shape *A* to shape *I* _____
- (8) Shape *A* to shape *J* _____

(3) On the grid below carry out the transformations given.



- (1) Rotate shape A 90° anticlockwise centre $(0,0)$. Label the shape B .
- (2) Reflect shape A in the line with equation $x = 4$. Label the shape C .
- (3) Enlarge shape A scale factor 2 centre $(0,0)$. Label the shape D .
- (4) Enlarge shape A scale factor -2 centre $(0,0)$. Label the shape E .
- (5) Translate shape A by the vector $\begin{pmatrix} 3 \\ -5 \end{pmatrix}$. Label the shape F .
- (6) Reflect shape A in the line with equation $x = 0$. Label the shape G .
- (7) Enlarge shape A scale factor 3 centre $(4,1)$. Label the shape H .
- (8) Translate shape A by the vector $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$. Label the shape I .

(4) On the grid below carry out the transformations given.



- (1) Enlarge shape A scale factor $-\frac{1}{2}$ centre $(0,0)$. Label the shape B .
- (2) Reflect shape A in the line with equation $y = 2$. Label the shape C .
- (3) Enlarge shape A scale factor $\frac{1}{2}$ centre $(0,0)$. Label the shape D .
- (4) Translate shape A by the vector $\begin{pmatrix} 7 \\ 0 \end{pmatrix}$. Label the shape E .
- (5) Rotate shape A 90° anticlockwise centre $(-2,6)$. Label the shape F .