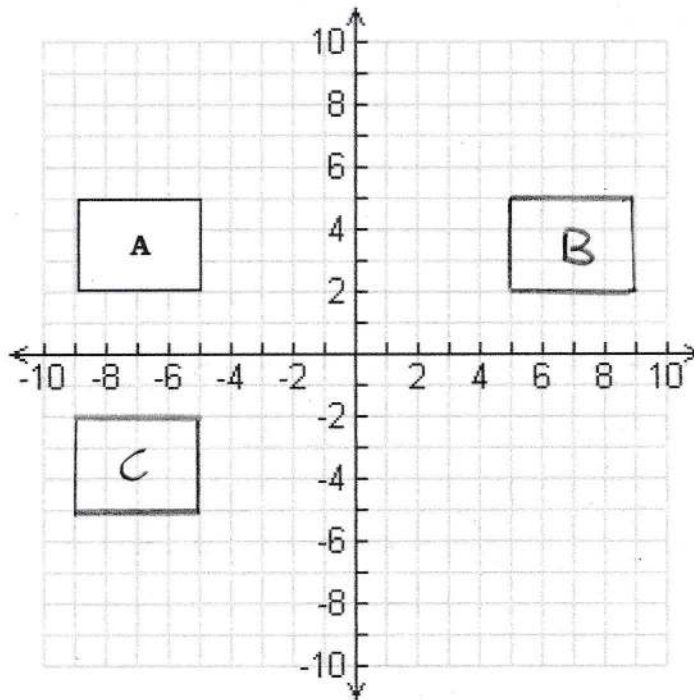


## TRANSFORMATIONS – PRACTICE QUESTIONS

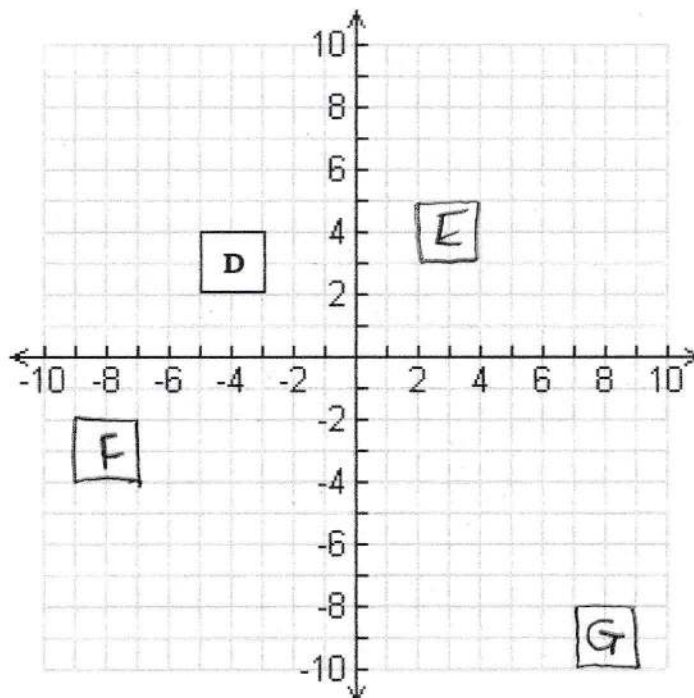
1.

- (a) Reflect Shape A in the y axis and label this Shape B.  
(b) Reflect Shape A in the x axis and label this Shape C.



2.

- (a) Rotate Shape D  $90^\circ$  clockwise about  $(0,0)$  and label this Shape E.  
(b) Rotate Shape D  $90^\circ$  anti-clockwise about  $(-3,-2)$  and label this Shape F.  
(c) Rotate Shape D  $180^\circ$  about  $(2,-3)$  and label this Shape G.

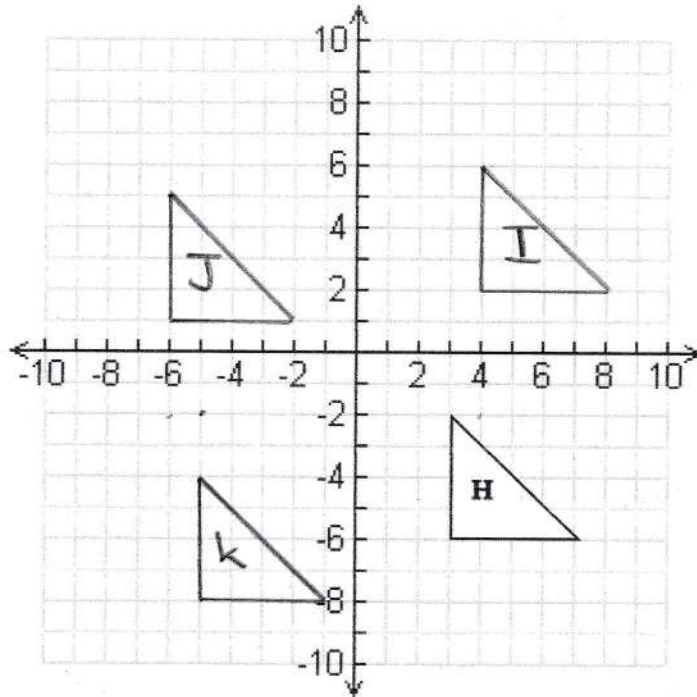


3.

(a) Translate Shape H using the vector  $\begin{pmatrix} 1 \\ 8 \end{pmatrix}$  and label this Shape I.

(b) Translate Shape H using the vector  $\begin{pmatrix} -9 \\ 7 \end{pmatrix}$  and label this Shape J.

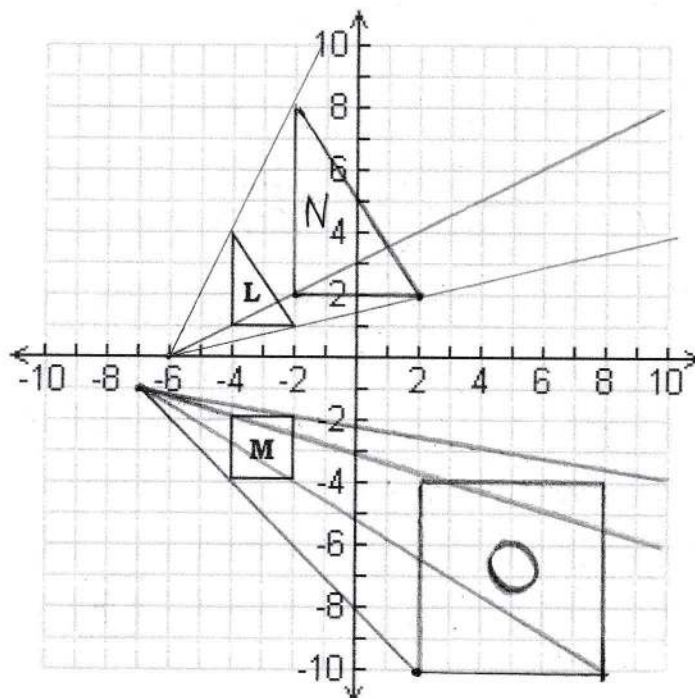
(c) Translate Shape H using the vector  $\begin{pmatrix} -8 \\ -2 \end{pmatrix}$  and label this Shape K.



4.

(a) Enlarge Shape L with scale factor 2 using  $(-6, 0)$  as the centre of enlargement and label this Shape N.

(b) Enlarge Shape M with scale factor 3 using  $(-7, -1)$  as the centre of enlargement and label this Shape O.

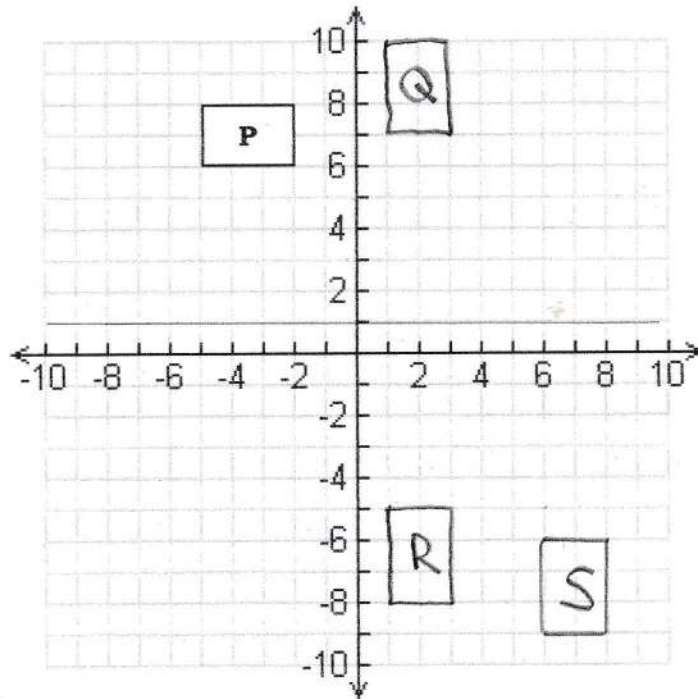


5.

(a) Rotate Shape P  $90^\circ$  clockwise about  $(0,5)$  and label this Shape Q.

(b) Then reflect Shape Q in the line  $y = 1$  and label this Shape R.

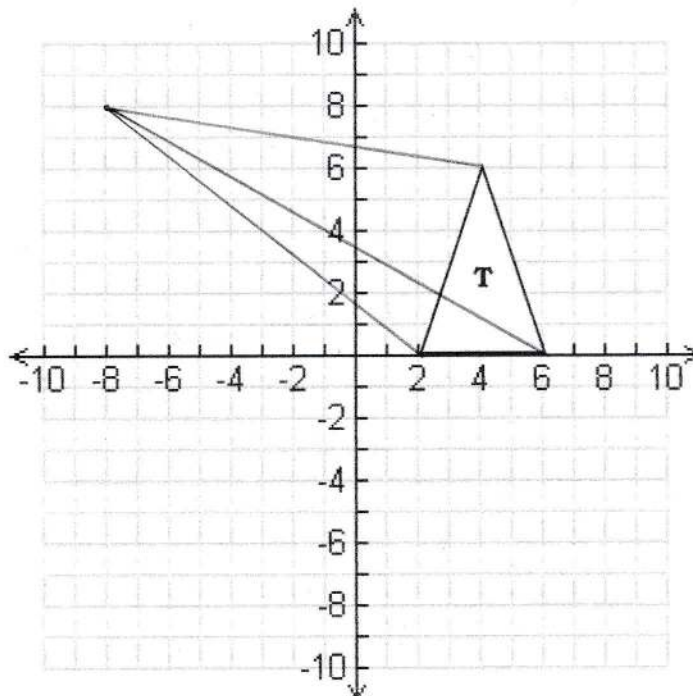
(c) Then translate Shape R using the vector  $\begin{pmatrix} 5 \\ -1 \end{pmatrix}$  and label this Shape S.



6.

(a) Enlarge Shape T with scale factor 0.5 using  $(-8,8)$  as the centre of enlargement and label this Shape U.

(b) Then rotate Shape U  $180^\circ$  about  $(1,-1)$  and label this Shape V.



7.

(a) Describe fully the single transformation that transforms Shape W into Shape X.

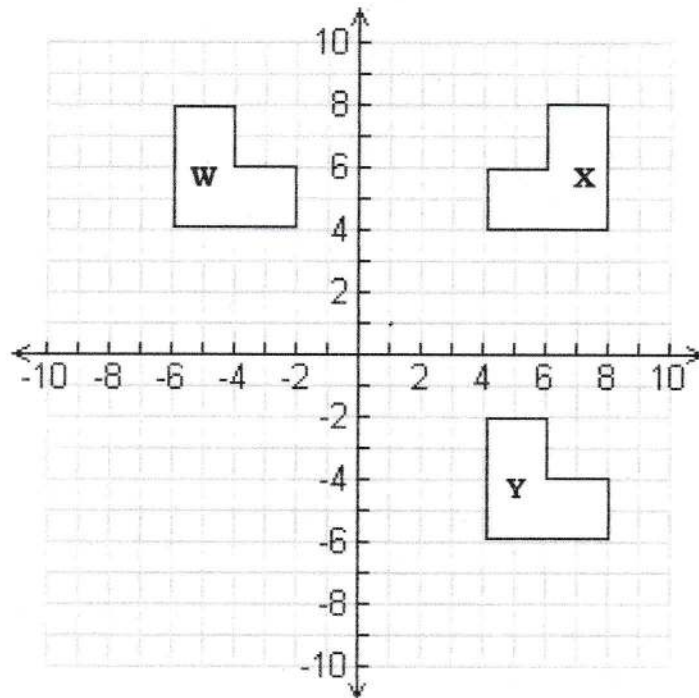
reflection in line  $x=1$

(b) Describe fully the single transformation that transforms Shape X into Shape Y.

rotation  $90^\circ$  clockwise about  $(1,1)$

(c) Describe fully the single transformation that transforms Shape Y into Shape W.

translation  
 $\begin{pmatrix} 10 \\ -10 \end{pmatrix}$



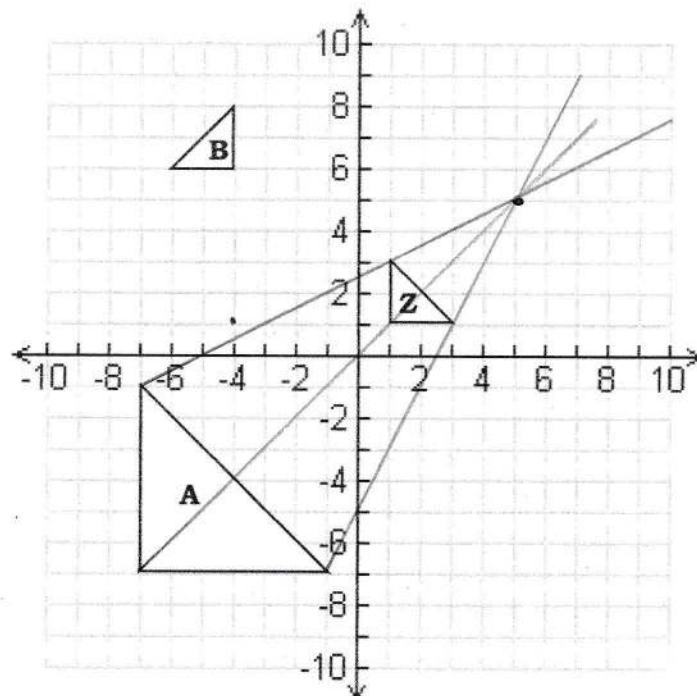
8.

(a) Describe fully the single transformation that transforms Shape Z into Shape A.

enlargement, scale factor 3, centre  $(5,5)$

(b) Describe fully the single transformation that transforms Shape Z into Shape B.

rotation  $90^\circ$  anti-clockwise about  $(-4,1)$ .

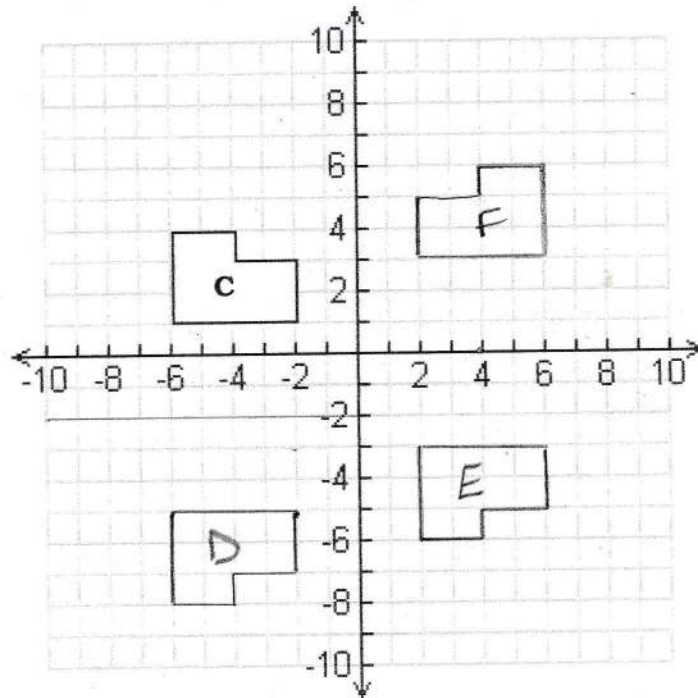


9.

(a) Reflect Shape C in the line  $y = -2$  and label this Shape D.

(b) Then translate Shape D using the vector  $\begin{pmatrix} 8 \\ 2 \end{pmatrix}$  and label this Shape E.

(c) Then rotate Shape E  $180^\circ$  about  $(4,0)$  and label this Shape F.



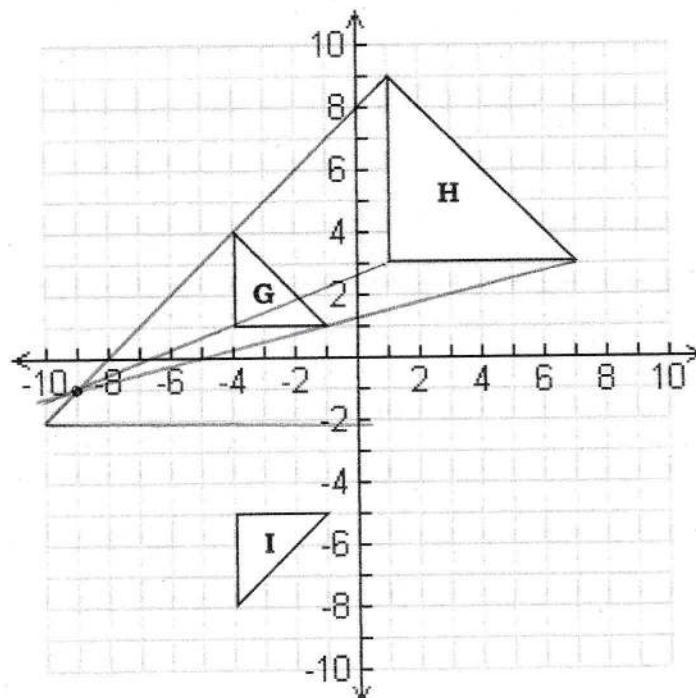
10.

(a) Describe fully the single transformation that transforms Shape G into Shape H.

enlargement, scale factor 2, centre  $(-9, -1)$ .

(b) Describe fully the single transformation that transforms Shape G into Shape I.

reflection in line  $y = -2$

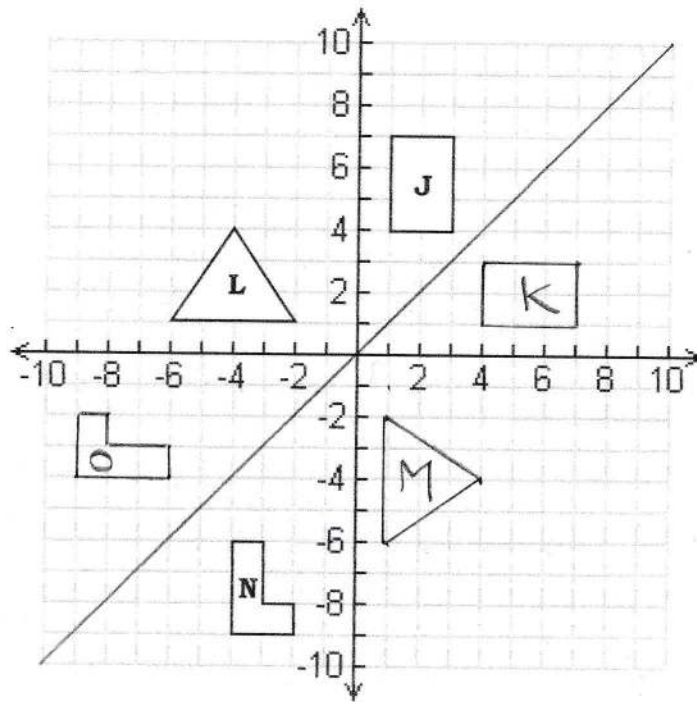


11.

(a) Reflect Shape J in the line  $y = x$  and label this Shape K.

(b) Reflect Shape L in the line  $y = x$  and label this Shape M.

(c) Reflect Shape N in the line  $y = x$  and label this Shape O.



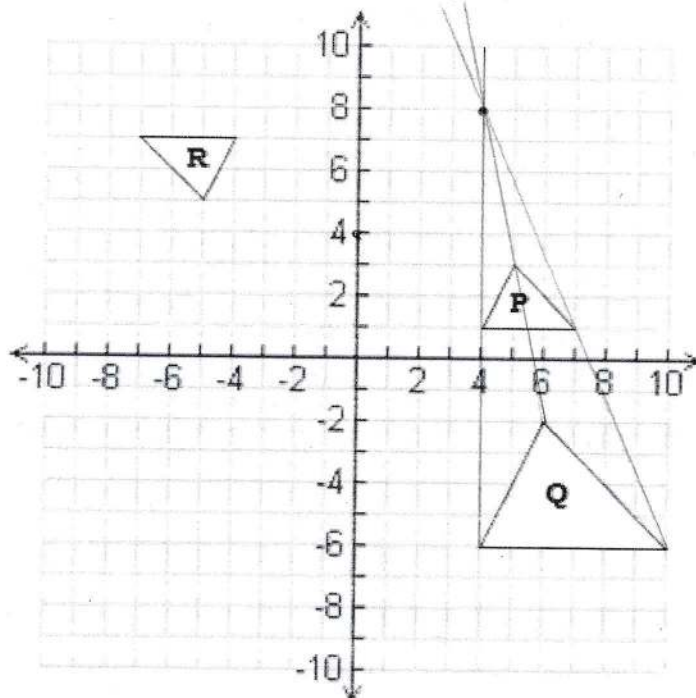
12.

(a) Describe fully the single transformation that transforms Shape P into Shape Q.

enlargement, scale factor 2, centre (4, 8)

(b) Describe fully the single transformation that transforms Shape P into Shape R.

rotation  $180^\circ$  about (0, 4)

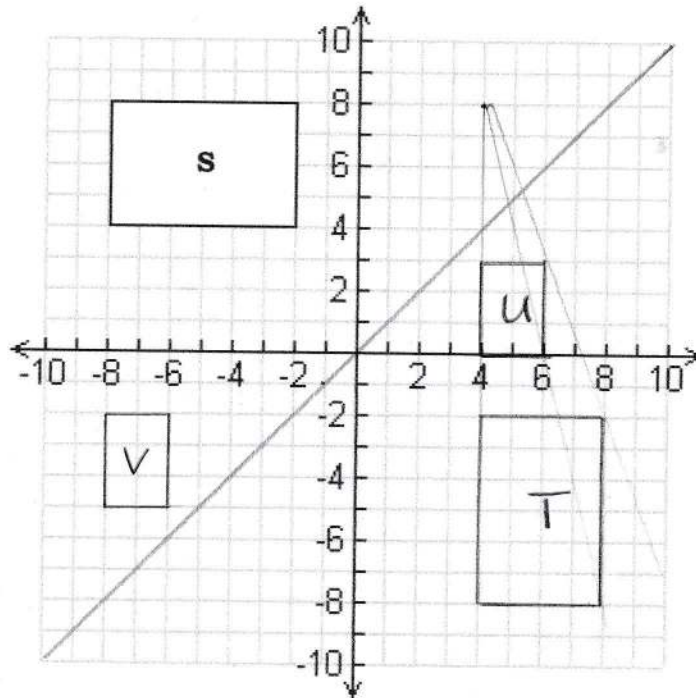


13.

(a) Reflect Shape S in the line  $y = x$  and label this Shape T.

(b) Then enlarge Shape T with scale factor 0.5 using  $(4, 8)$  as the centre of enlargement and label this Shape U.

(c) Then rotate Shape U  $180^\circ$  about  $(-1, -1)$  and label this Shape V.



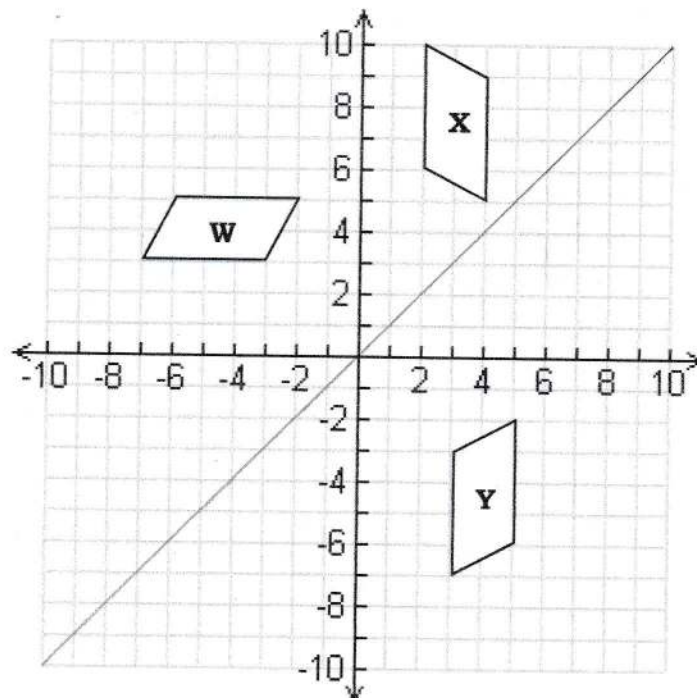
14.

(a) Describe fully the single transformation that transforms Shape W into Shape X.

*rotation  $90^\circ$  clockwise about  $(1, 2)$ .*

(b) Describe fully the single transformation that transforms Shape W into Shape Y.

*reflection in line  $y = x$*



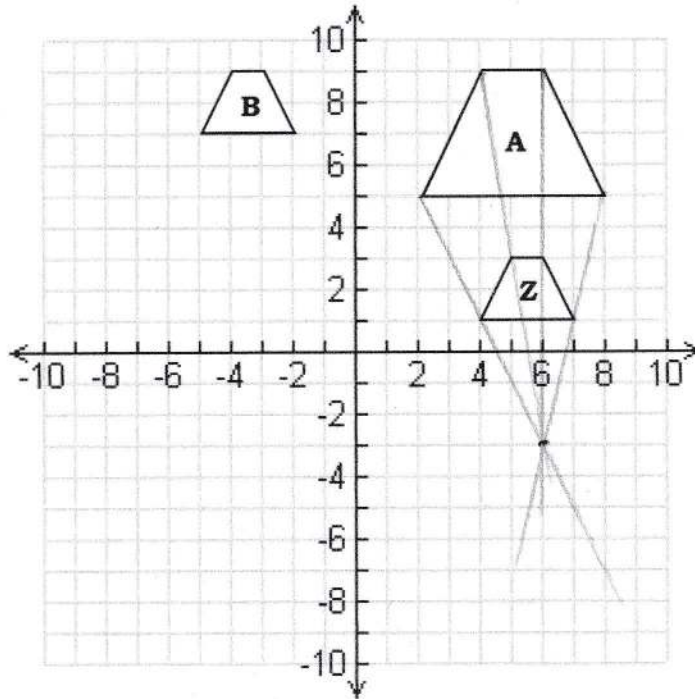
15.

(a) Describe fully the single transformation that maps Shape Z into Shape A.

enlargement, scale factor 2, centre (6, -3)

(b) Describe fully the single transformation that maps Shape Z into Shape B.

translation  $\begin{pmatrix} -9 \\ 6 \end{pmatrix}$



16.

(a) Reflect Shape Q in the line  $y = -x$  and label this Shape P.

(b) Describe fully the single transformation that transforms Shape P into Shape R.

enlargement, scale factor 0.5, centre (-6, 10)

