

Name:

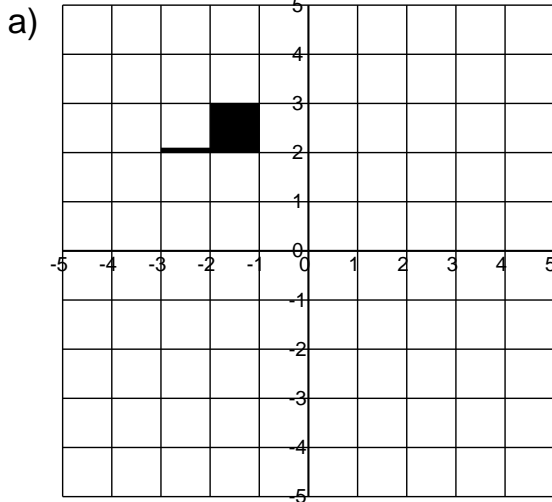
Class/Set:

# Demo Transformation Questions

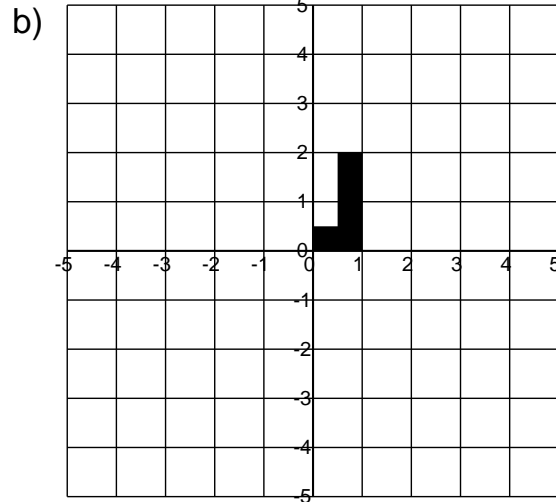
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Please answer on this sheet.

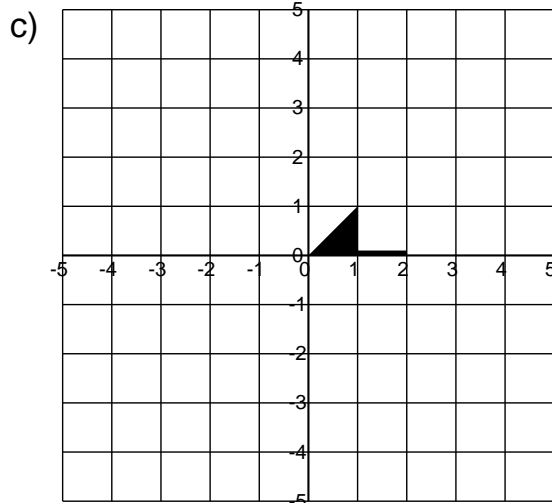
1: Transform the following shapes:



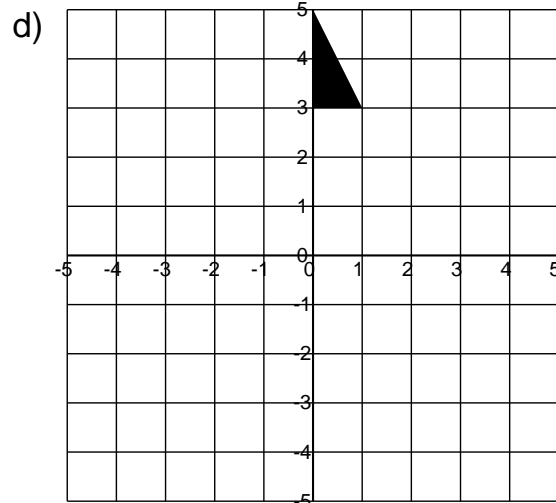
Rotate by  $90^\circ$  clockwise about  $(-3, 3)$



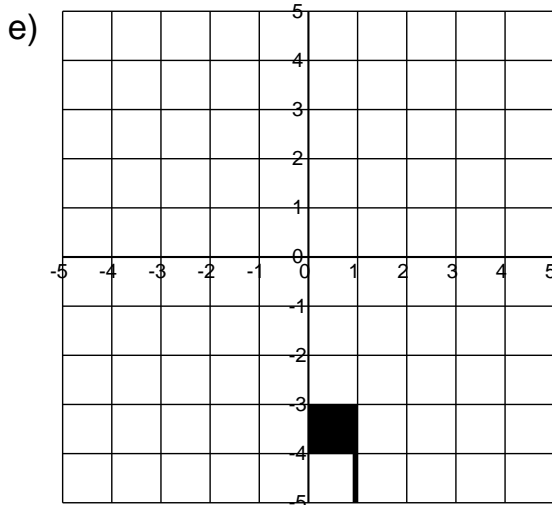
Rotate by  $180^\circ$  about  $(-1, -1)$



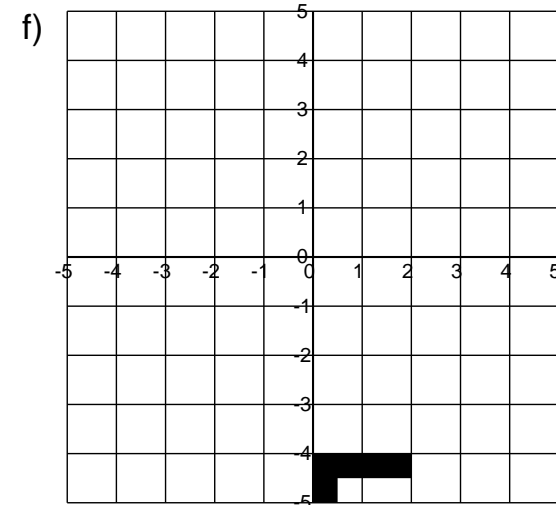
Rotate by  $90^\circ$  anticlockwise about  $(2, 2)$



Rotate by  $180^\circ$  about  $(-1, 2)$

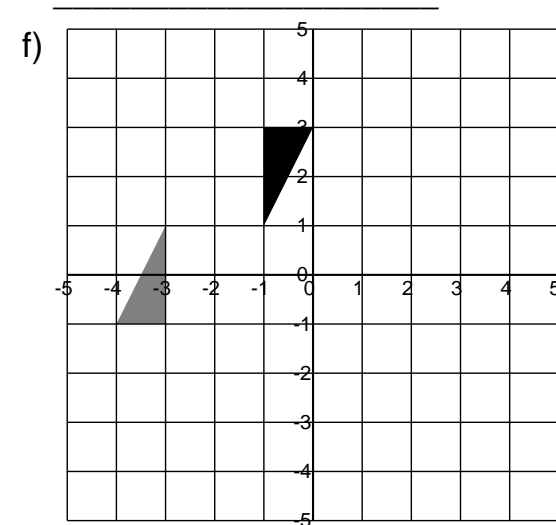
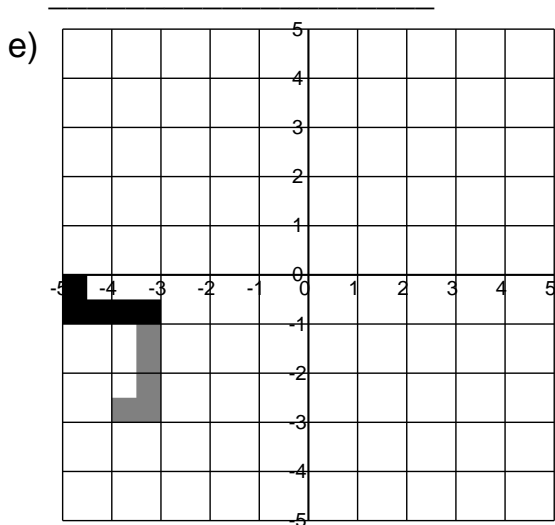
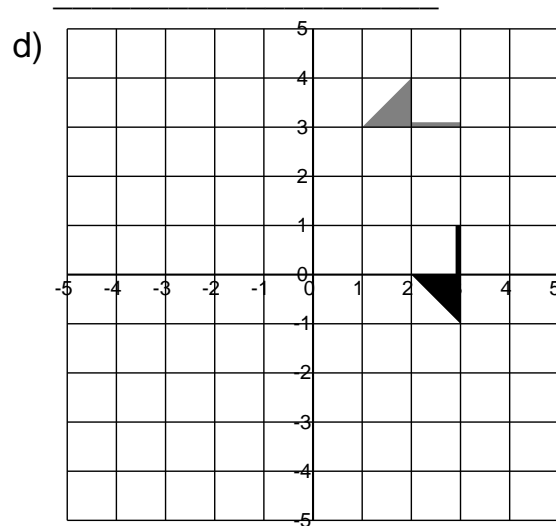
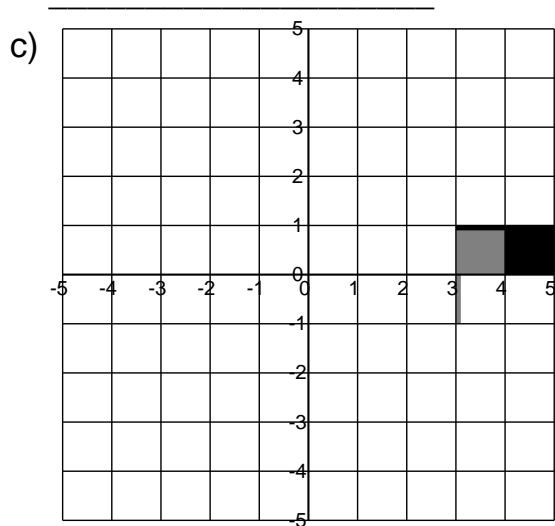
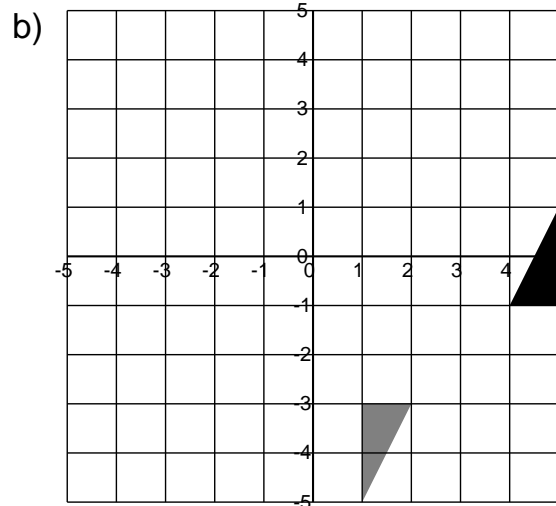
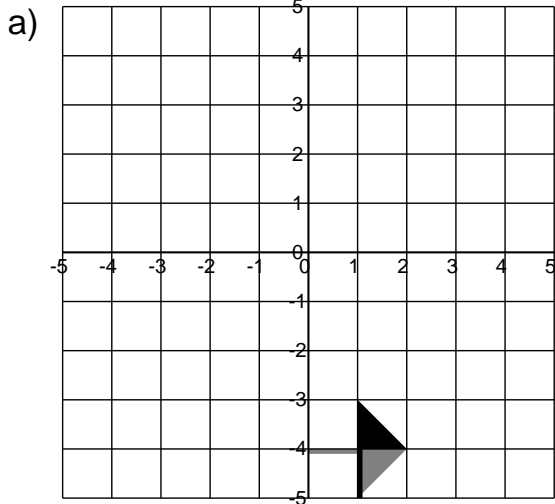


Rotate by  $90^\circ$  anticlockwise about  $(1, -3)$

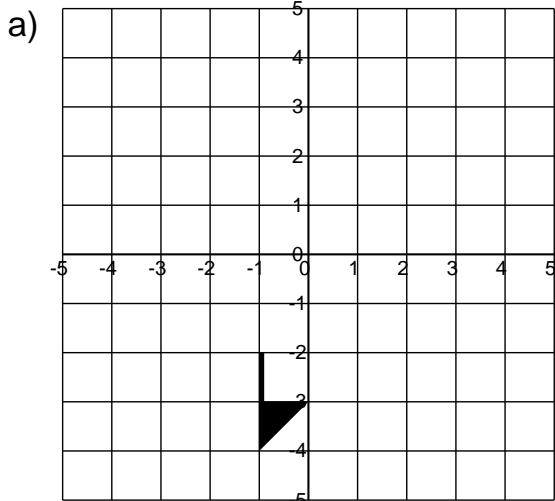


Rotate by  $90^\circ$  clockwise about  $(1, -3)$

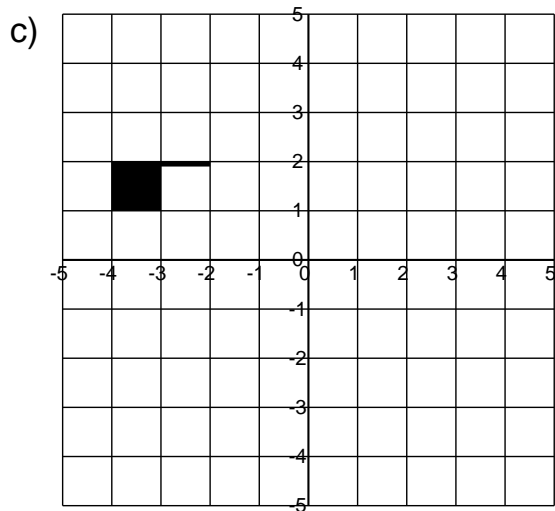
2: What transformation moves the grey shape onto the black shape?



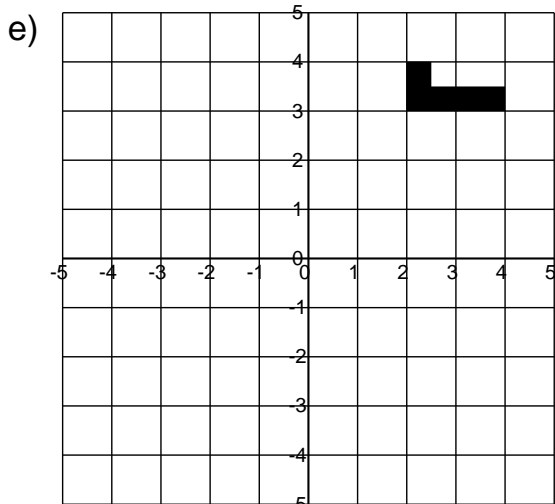
3: Transform the following shapes:



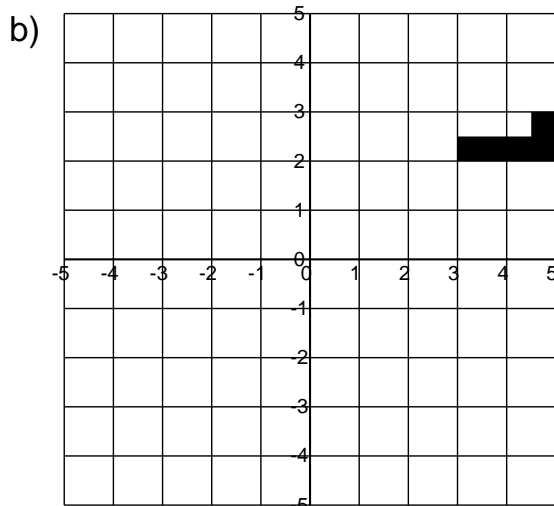
Reflect in  $y = x$



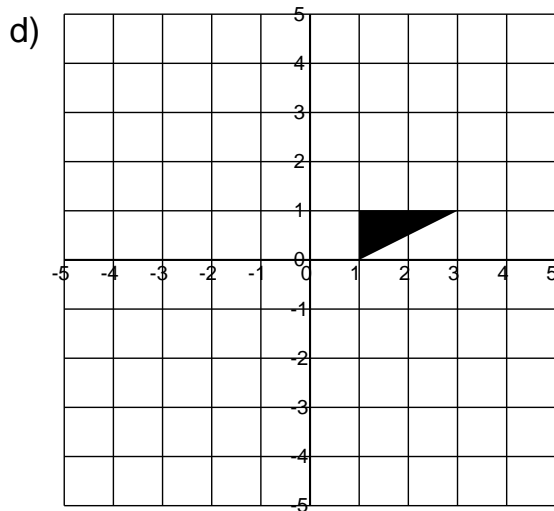
Reflect in  $y = 0$



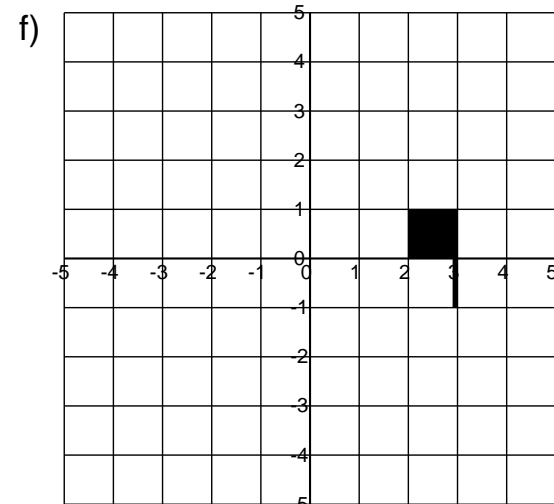
Reflect in  $y = x$



Reflect in  $x = 0$

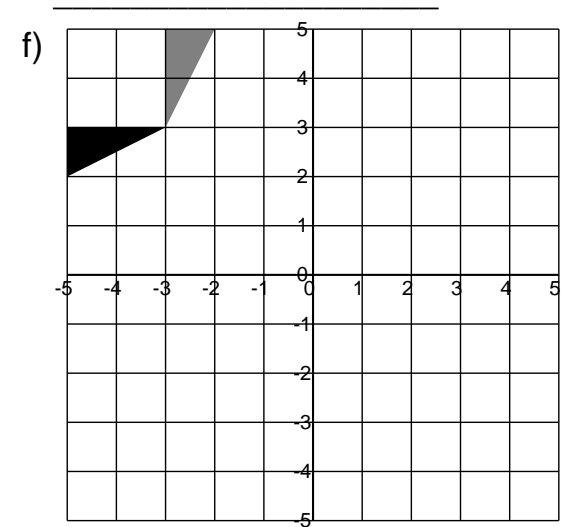
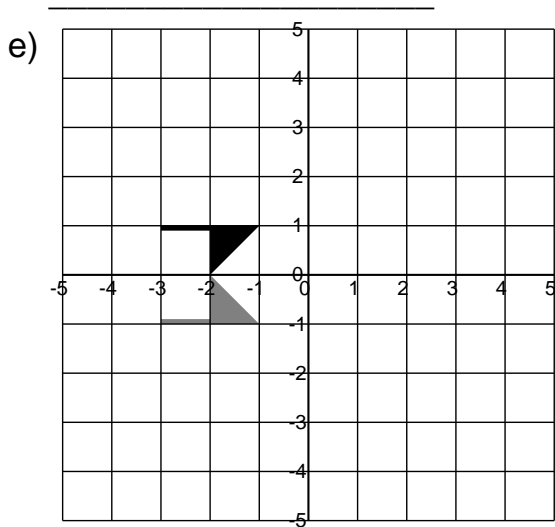
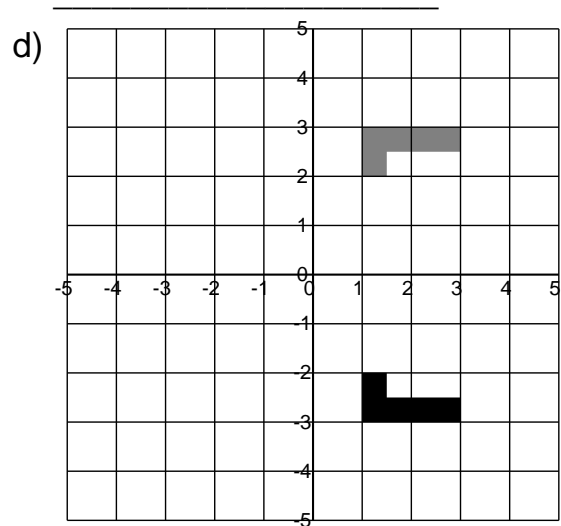
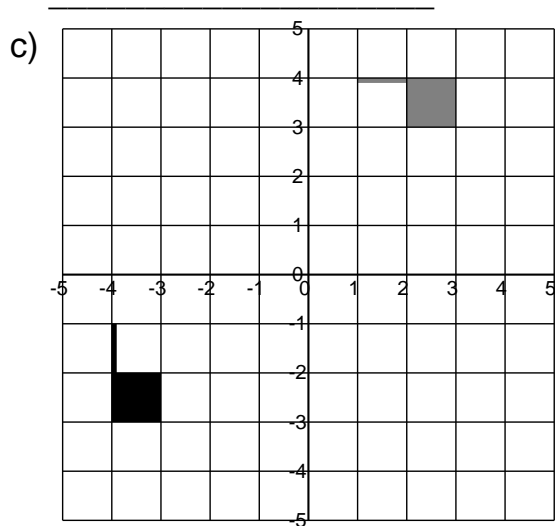
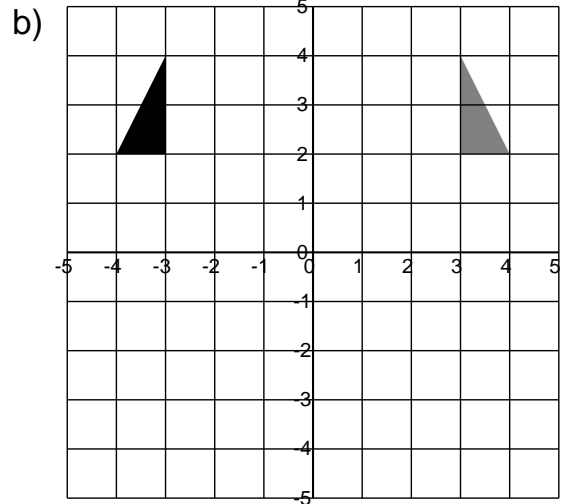
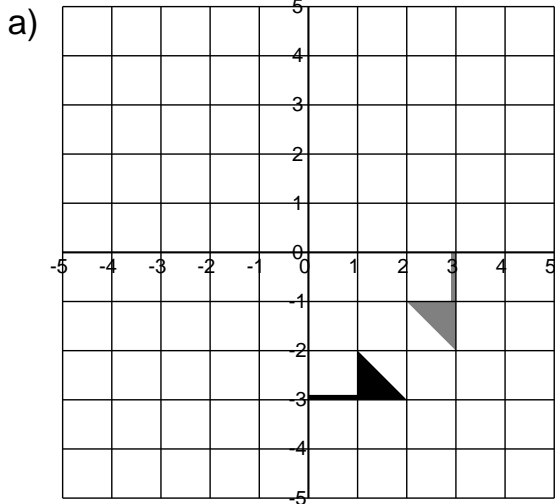


Reflect in  $y = -x$

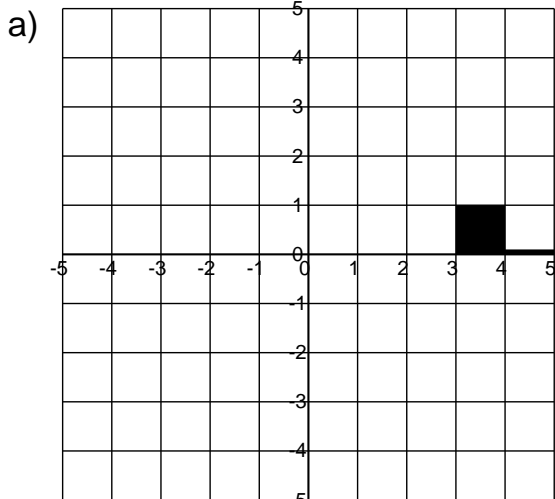


Reflect in  $y = 0$

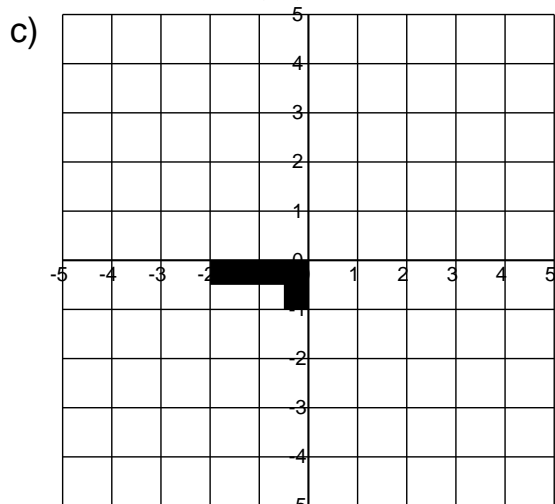
4: What transformation moves the grey shape onto the black shape?



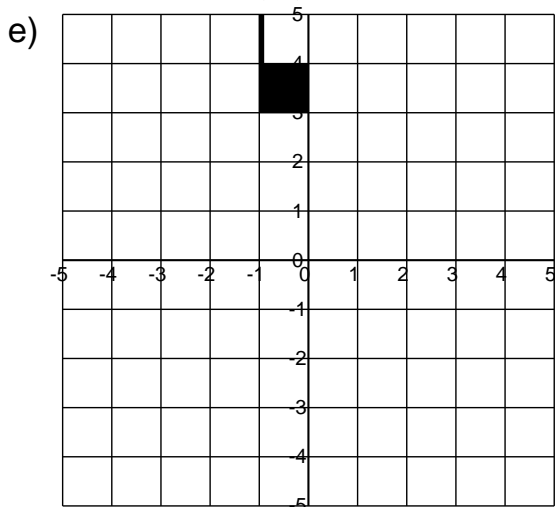
5: Transform the following shapes:



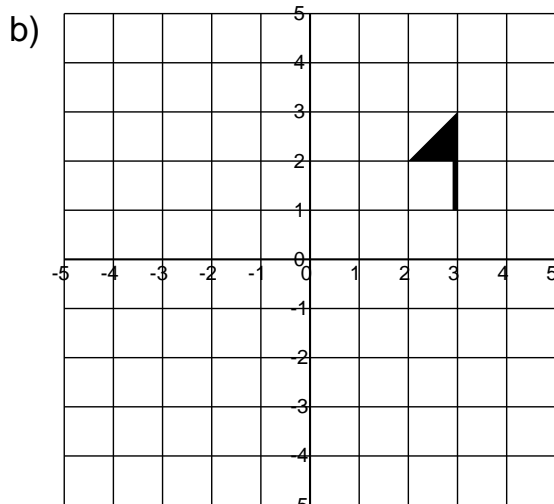
Translate by  $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$



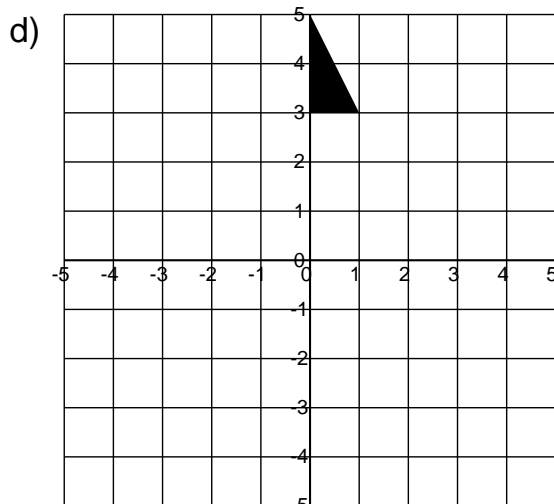
Translate by  $\begin{pmatrix} -3 \\ 1 \end{pmatrix}$



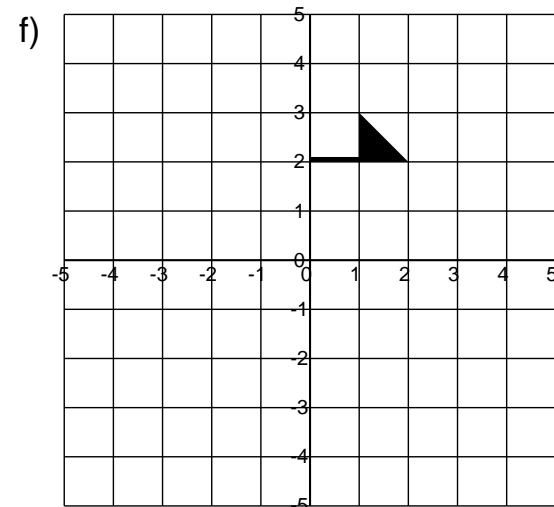
Translate by  $\begin{pmatrix} 1 \\ -1 \end{pmatrix}$



Translate by  $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$

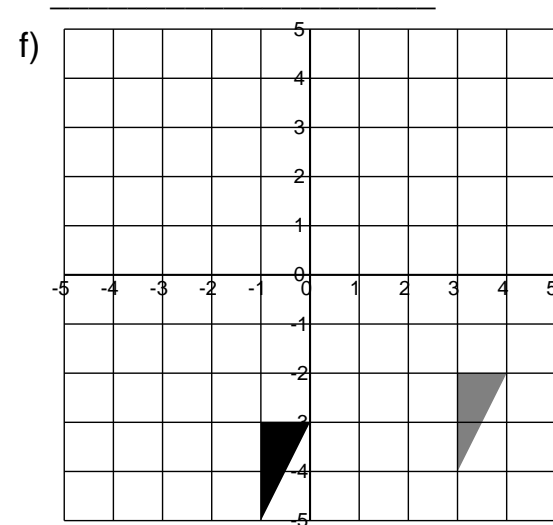
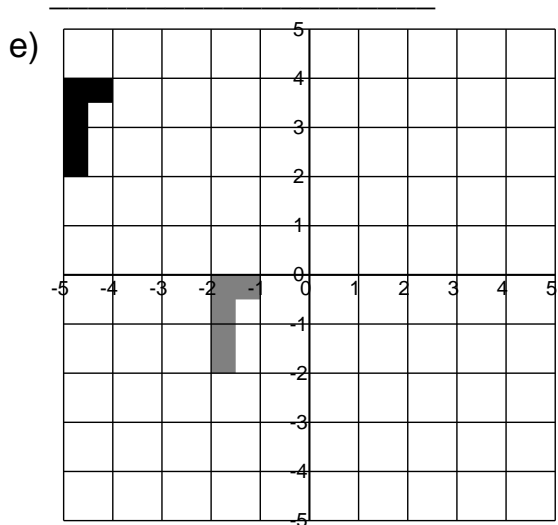
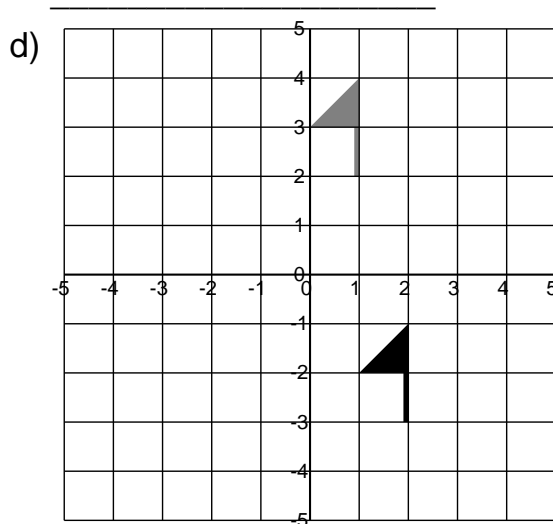
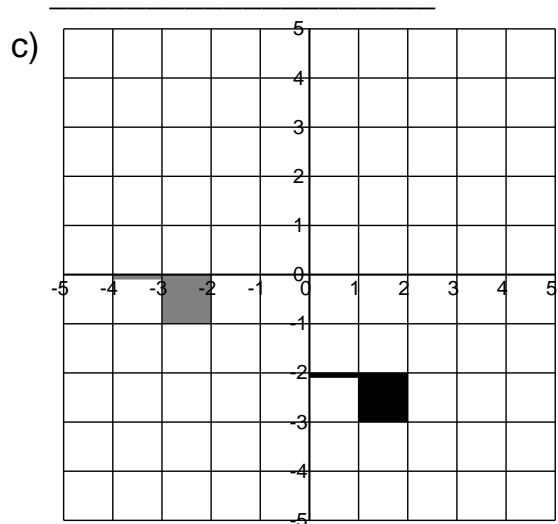
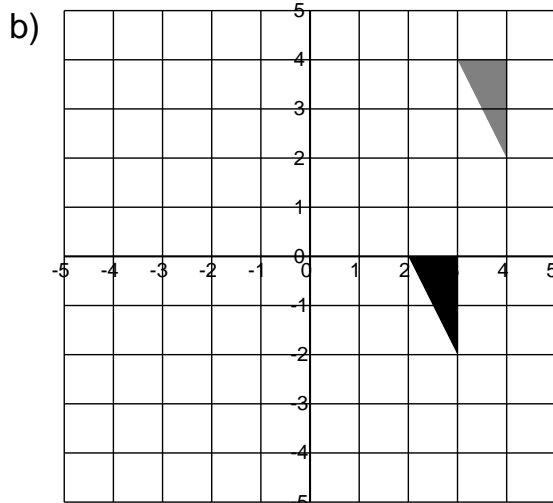
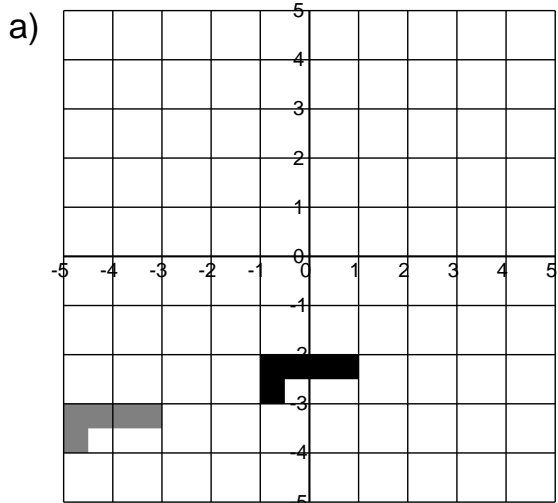


Translate by  $\begin{pmatrix} -1 \\ -5 \end{pmatrix}$

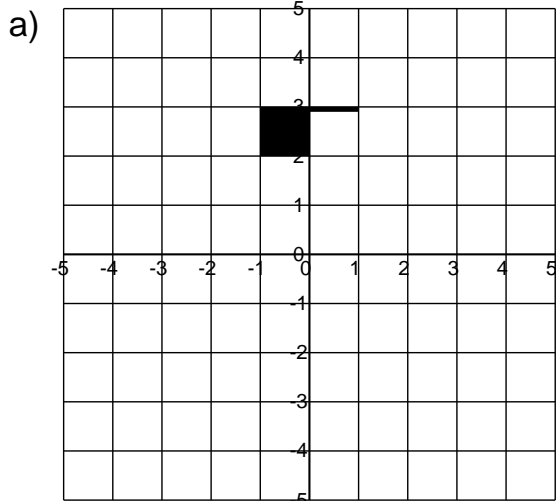


Translate by  $\begin{pmatrix} -2 \\ -5 \end{pmatrix}$

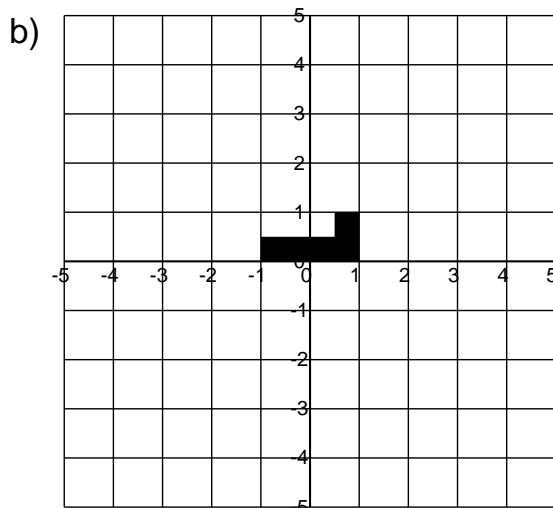
6: What transformation moves the grey shape onto the black shape?



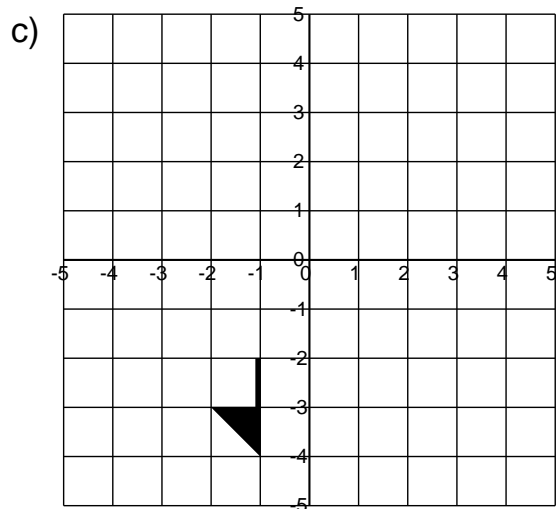
7: Transform the following shapes:



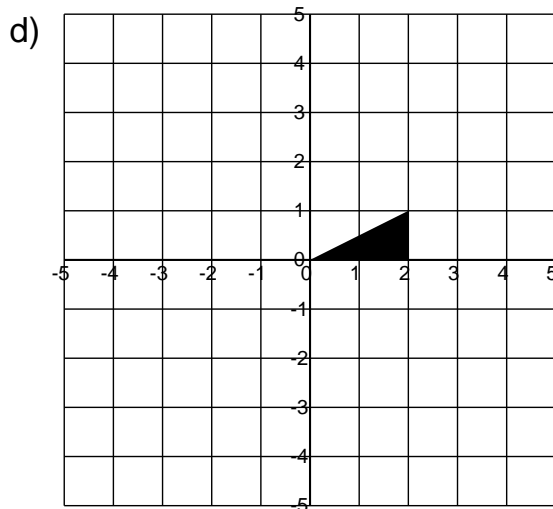
Enlarge with scale factor 2, centre (0, 1)



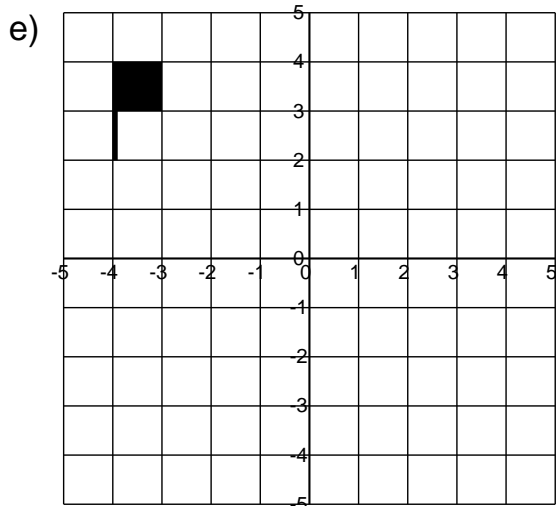
Enlarge with scale factor 3, centre (0, -1)



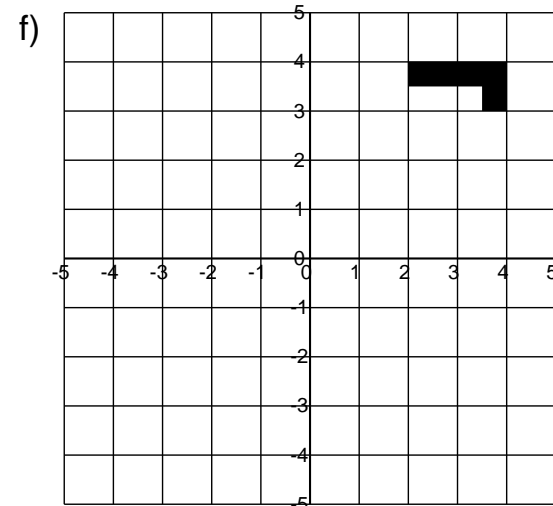
Enlarge with scale factor 4, centre (-3, -4)



Enlarge with scale factor 2, centre (-1, 0)

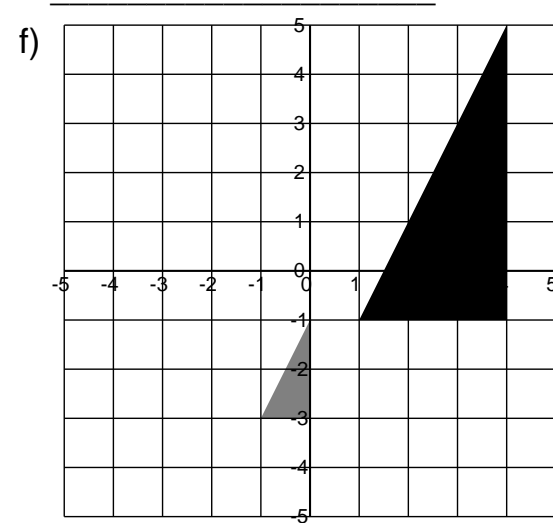
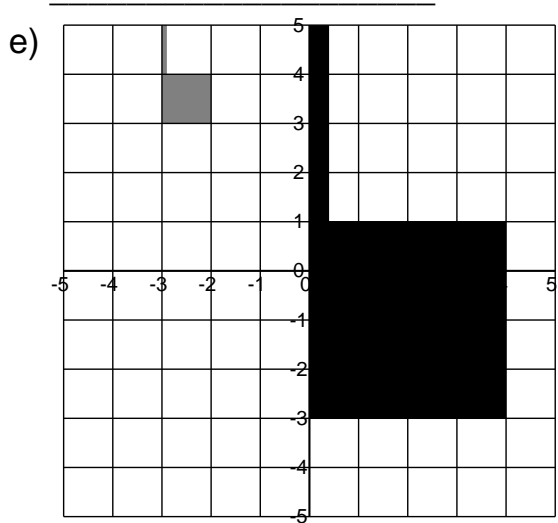
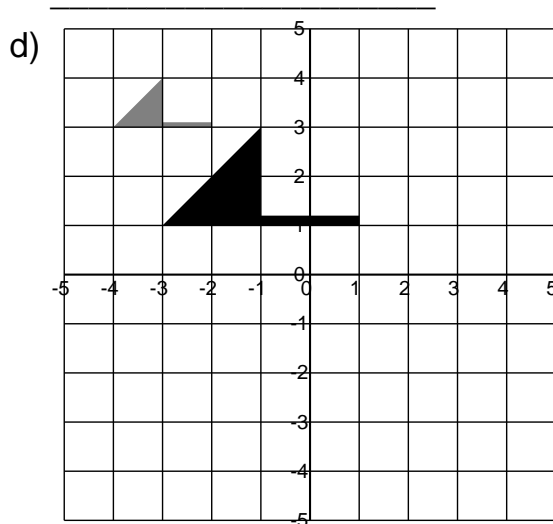
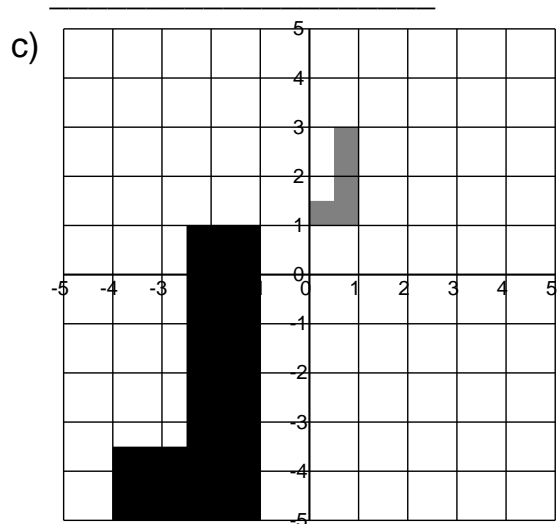
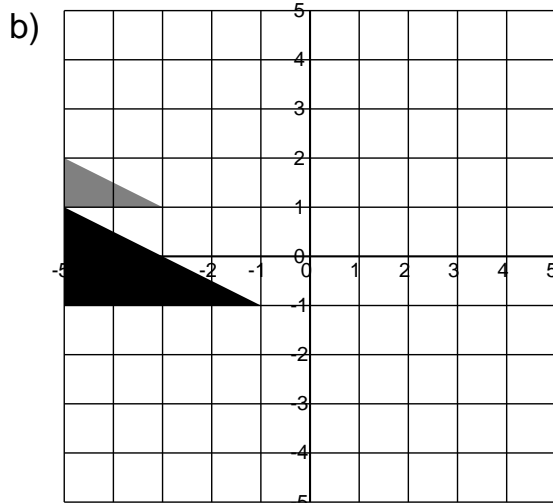
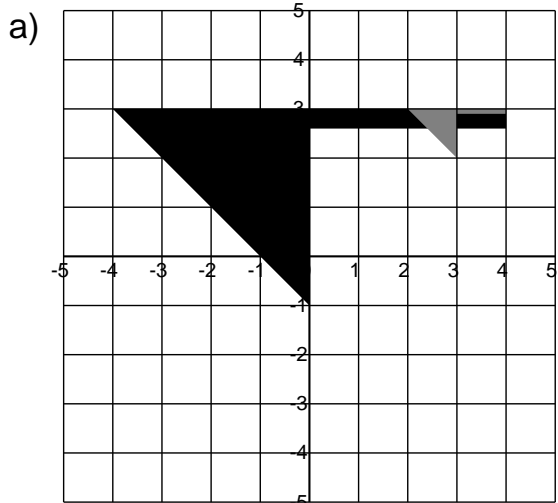


Enlarge with scale factor 3, centre (-5, 4)



Enlarge with scale factor 4, centre (4, 5)

8: What transformation moves the grey shape onto the black shape?

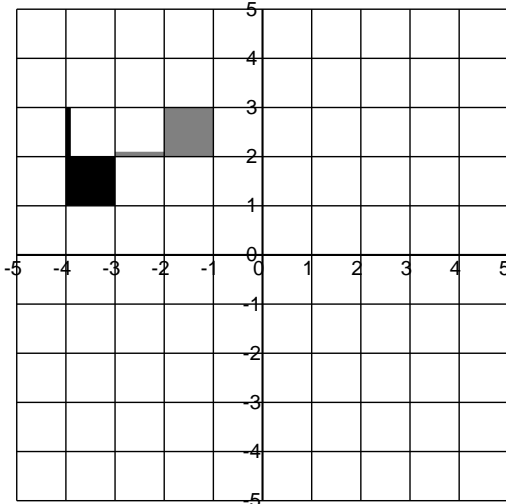




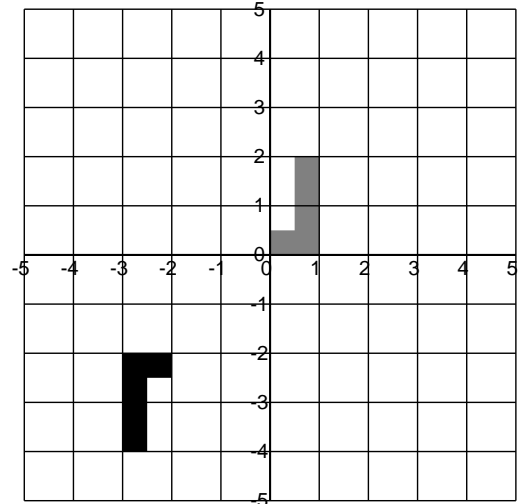
# Answers: Demo Transformation Questions

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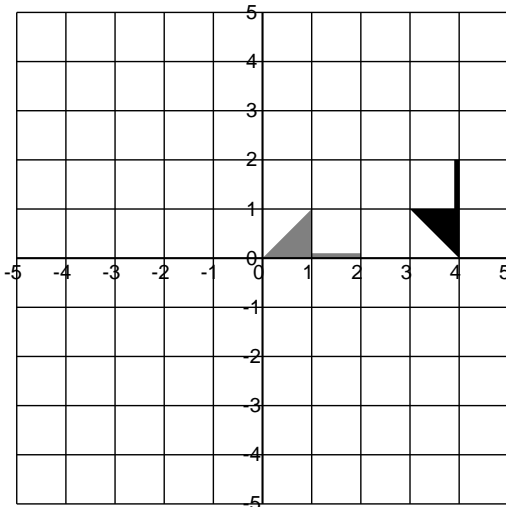
1: a)



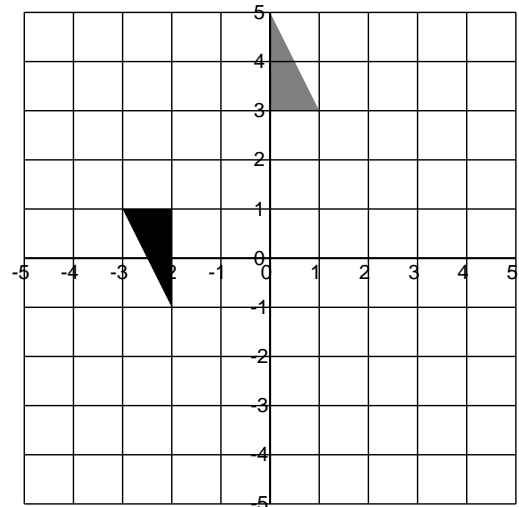
b)



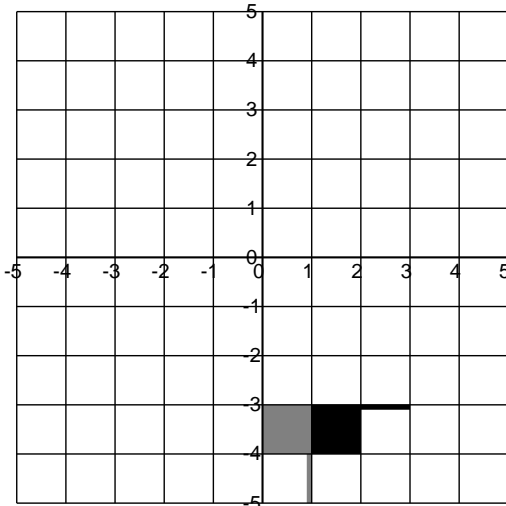
c)



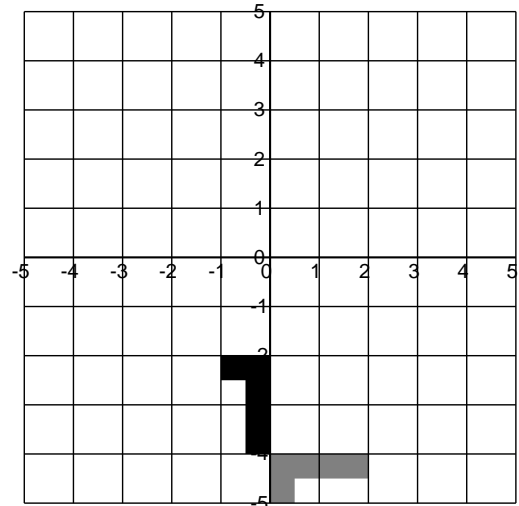
d)



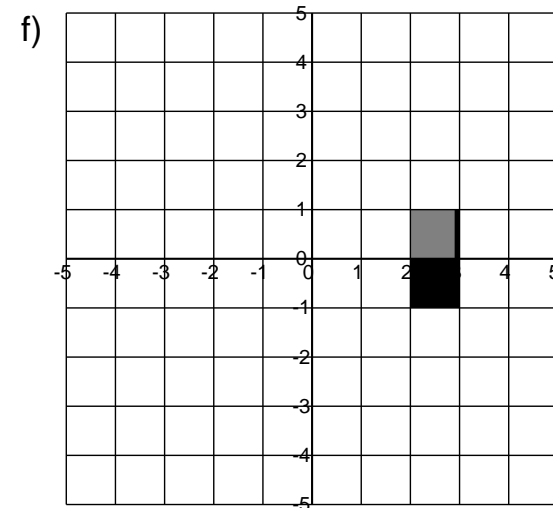
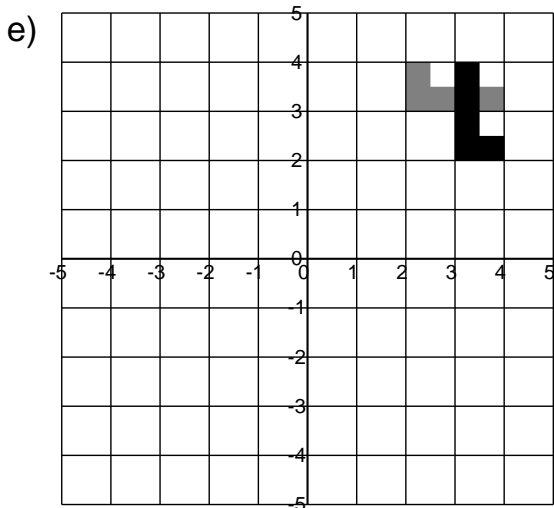
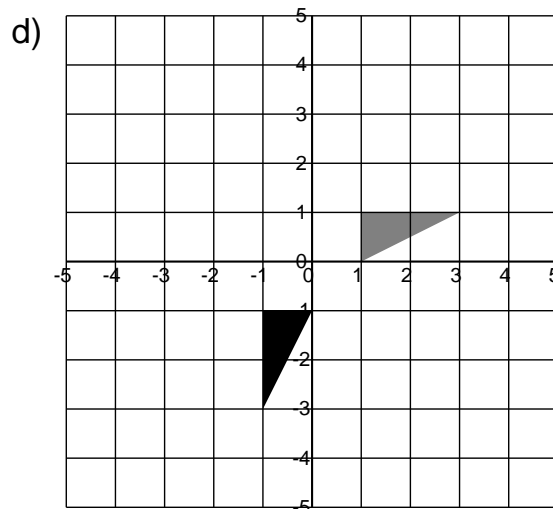
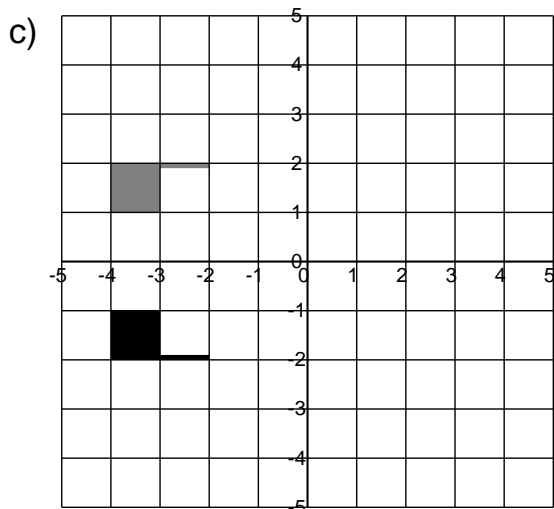
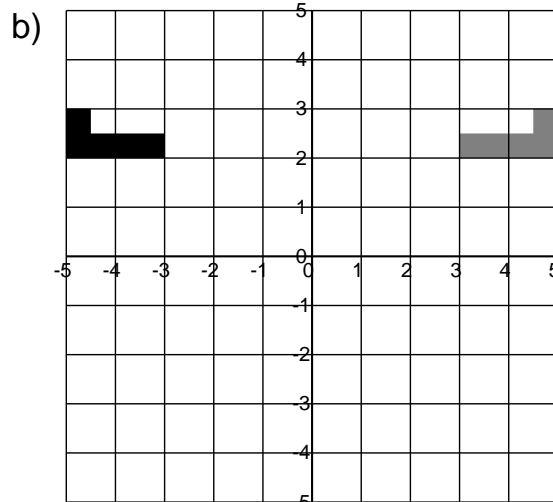
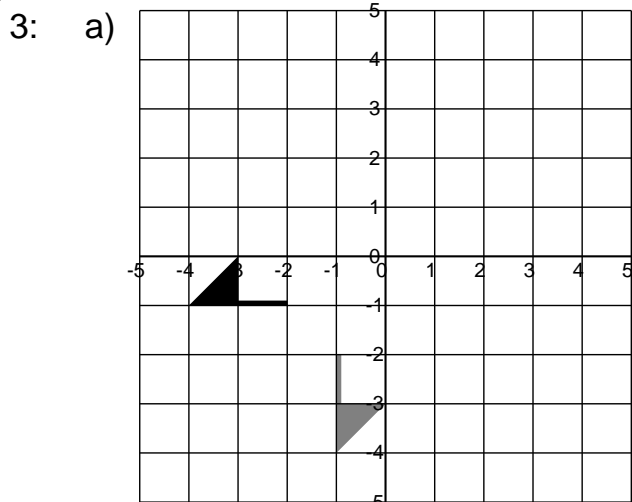
e)



f)



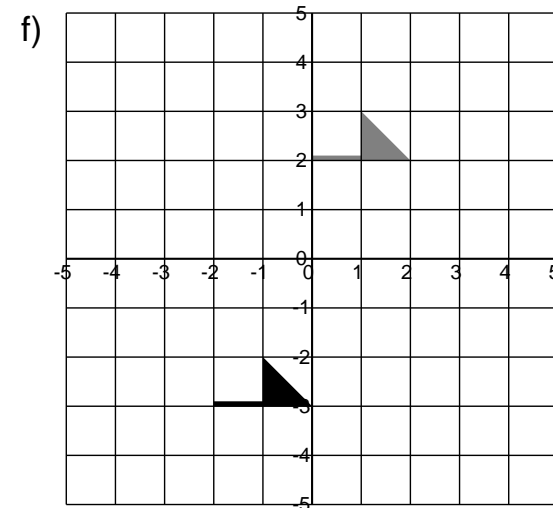
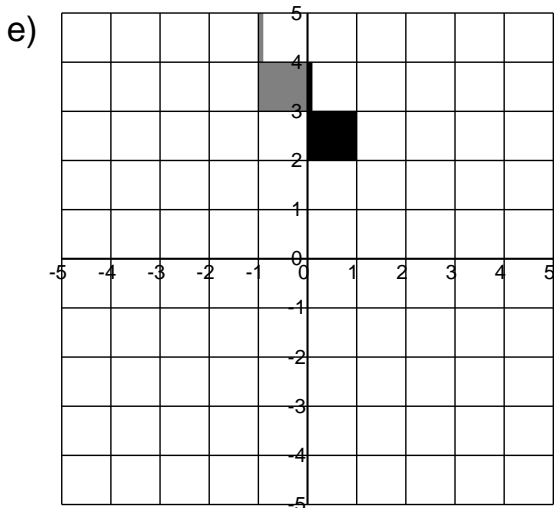
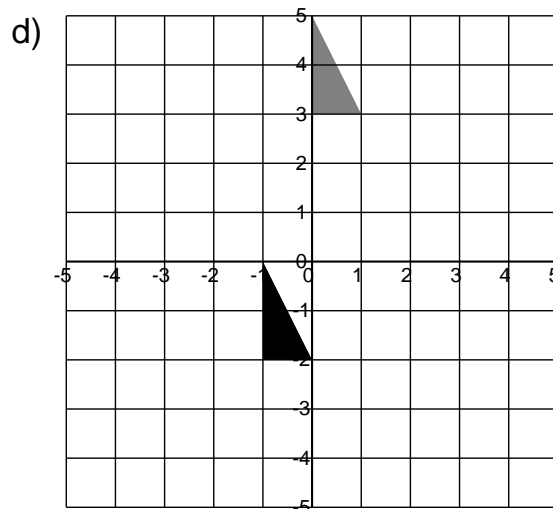
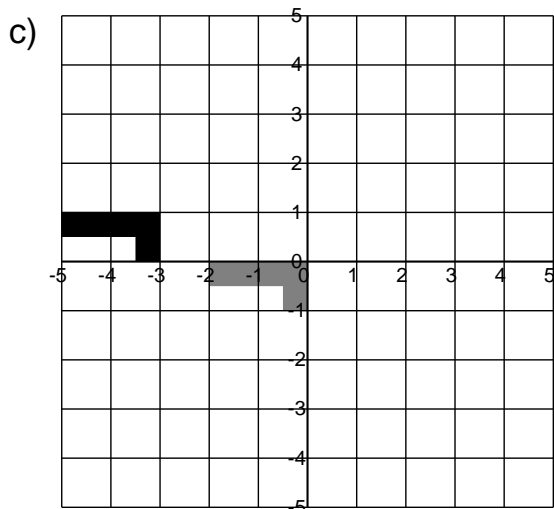
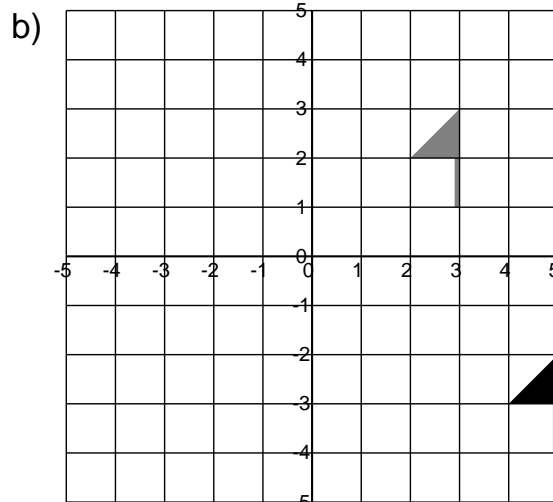
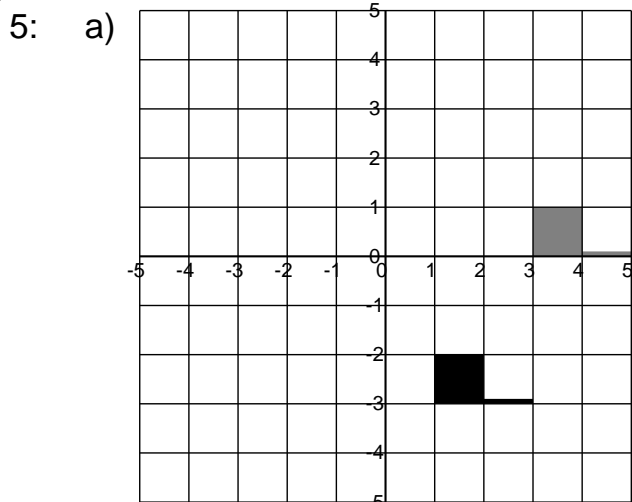
- 2: a) Rotation of  $90^\circ$  anticlockwise about  $(1, -4)$   
 b) Rotation of  $180^\circ$  about  $(3, -2)$   
 c) Rotation of  $90^\circ$  clockwise about  $(4, 0)$   
 d) Rotation of  $90^\circ$  anticlockwise about  $(4, 2)$   
 e) Rotation of  $90^\circ$  clockwise about  $(-3, -1)$   
 f) Rotation of  $180^\circ$  about  $(-2, 1)$



4: a) Reflection in  $y = -x$   
 d) Reflection in  $y = 0$

b) Reflection in  $x = 0$   
 e) Reflection in  $y = 0$

c) Reflection in  $y = -x$   
 f) Reflection in  $y = -x$



6: a) Translation of  $\begin{pmatrix} 4 \\ 1 \end{pmatrix}$

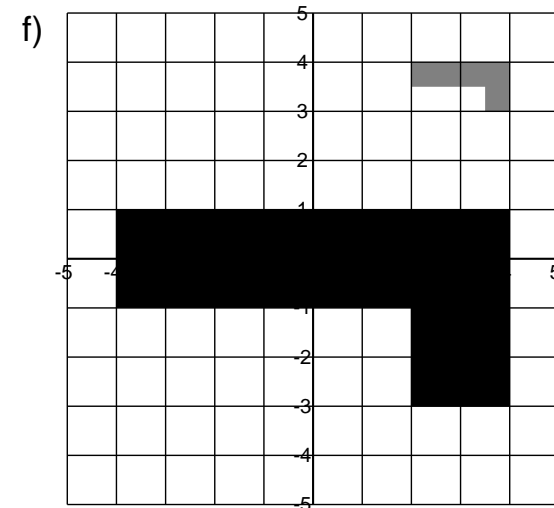
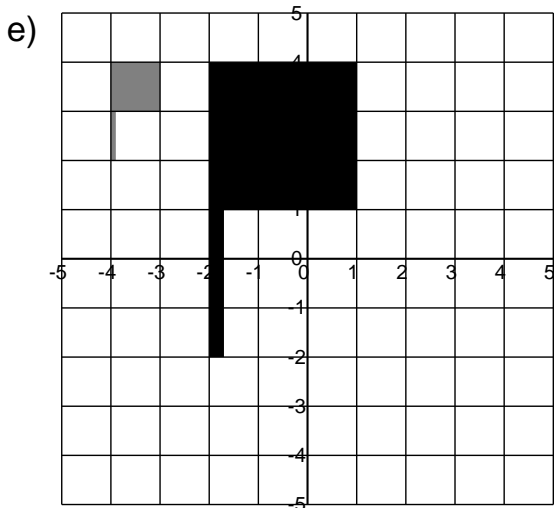
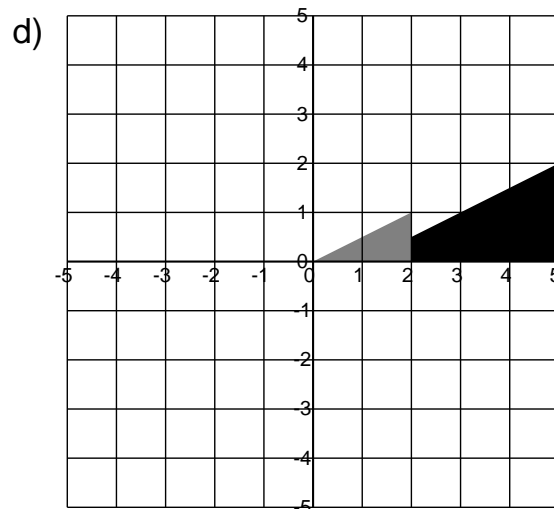
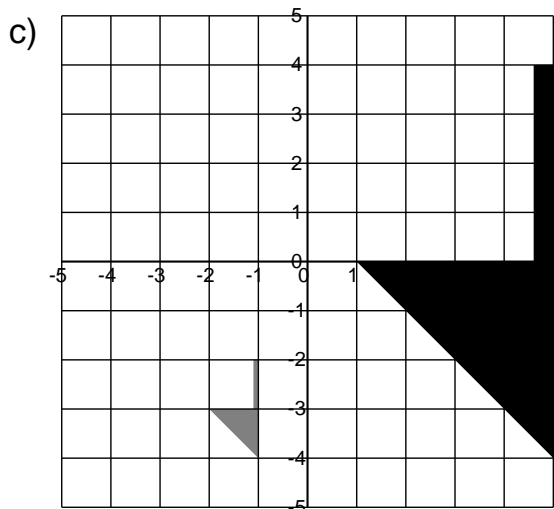
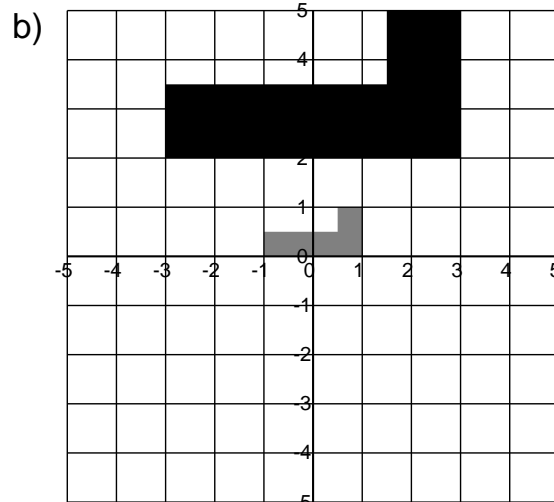
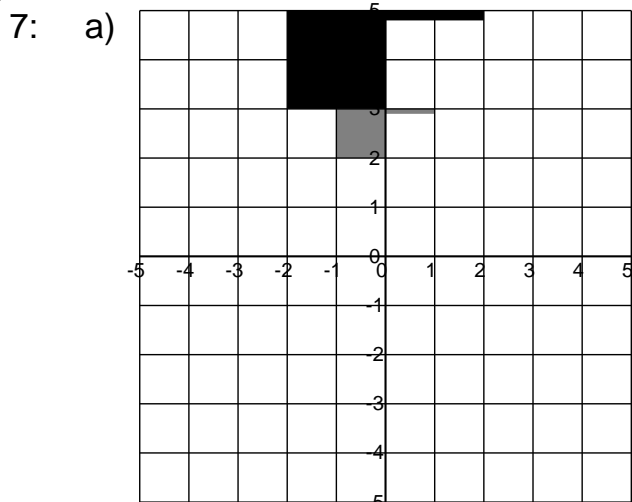
b) Translation of  $\begin{pmatrix} -1 \\ -4 \end{pmatrix}$

c) Translation of  $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$

d) Translation of  $\begin{pmatrix} 1 \\ -5 \end{pmatrix}$

e) Translation of  $\begin{pmatrix} -3 \\ 4 \end{pmatrix}$

f) Translation of  $\begin{pmatrix} -4 \\ -1 \end{pmatrix}$



- 8: a) Enlargement with scale factor 4, centre (4, 3)  
 b) Enlargement with scale factor 2, centre (-5, 3)  
 c) Enlargement with scale factor 3, centre (2, 4)  
 d) Enlargement with scale factor 2, centre (-5, 5)  
 e) Enlargement with scale factor 4, centre (-4, 5)  
 f) Enlargement with scale factor 3, centre (-2, -4)