

Name:

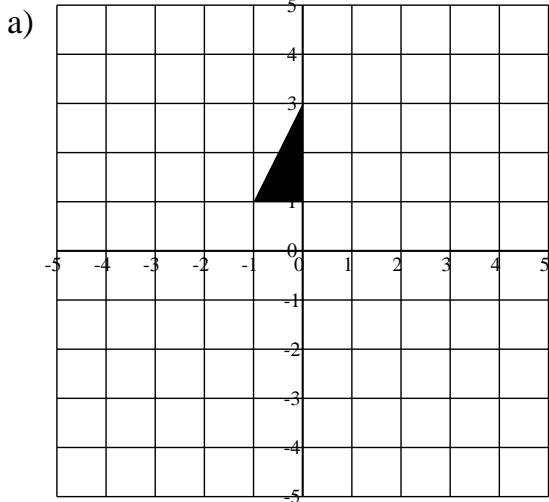
Class/Set:

Demo Transformation Questions

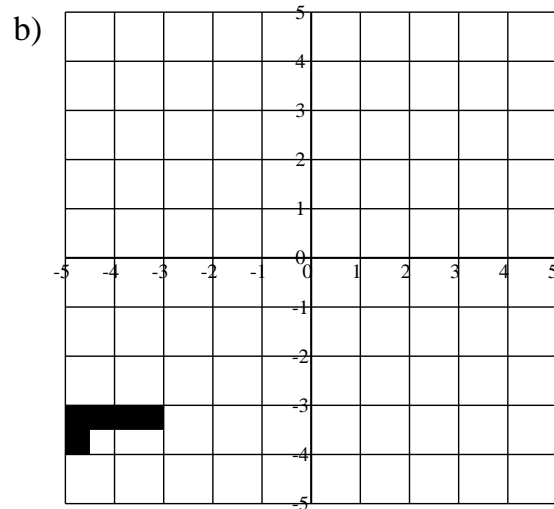
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Please answer on this sheet.

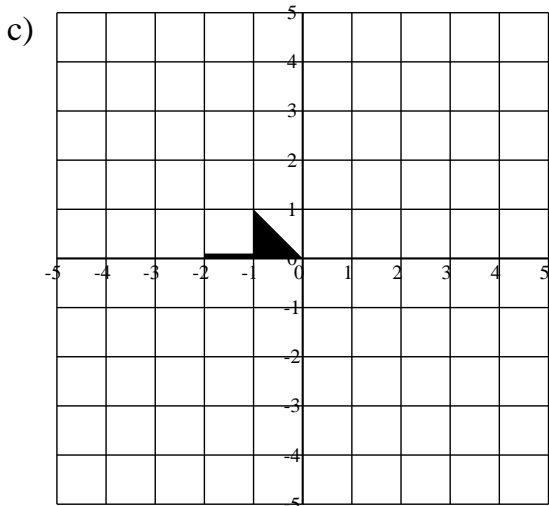
1: Transform the following shapes:



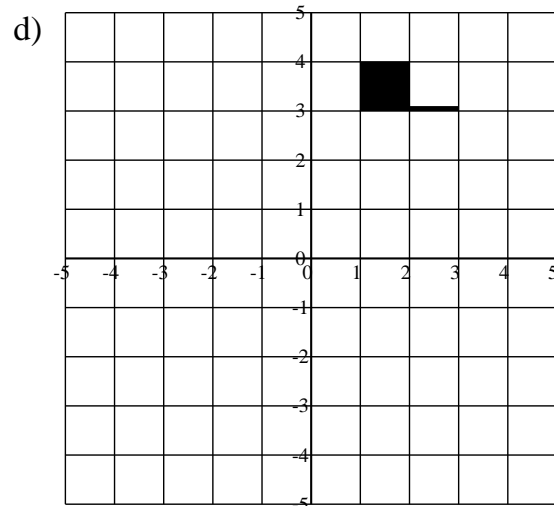
Rotate by 90° clockwise about $(0, 1)$



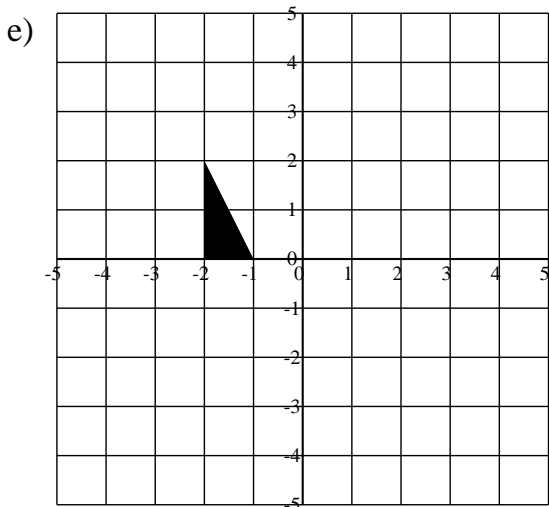
Rotate by 90° anticlockwise about $(-3, -2)$



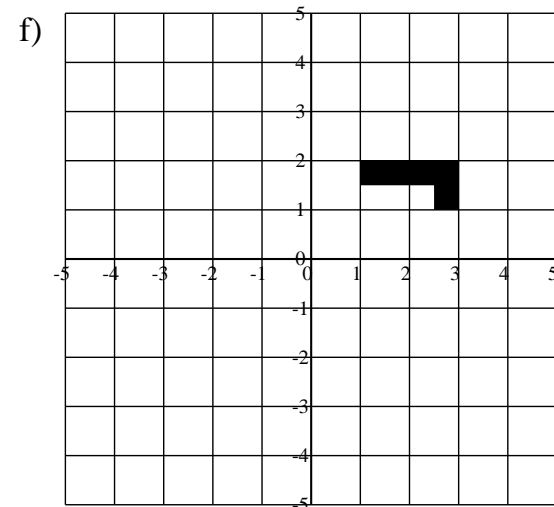
Rotate by 180° about $(-2, 2)$



Rotate by 180° about $(3, 2)$

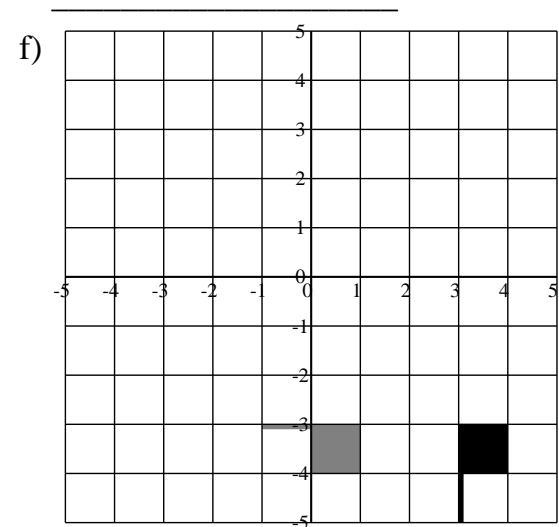
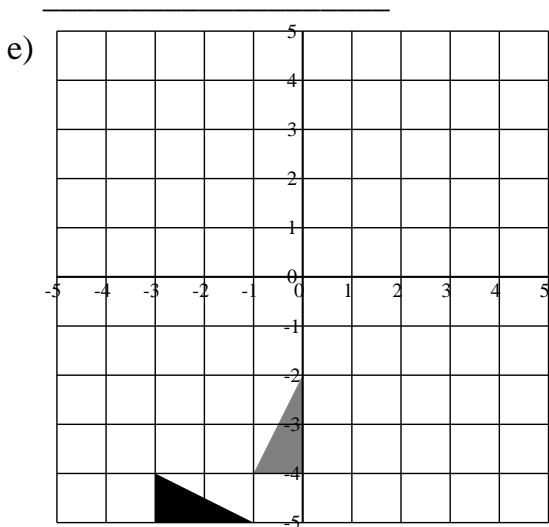
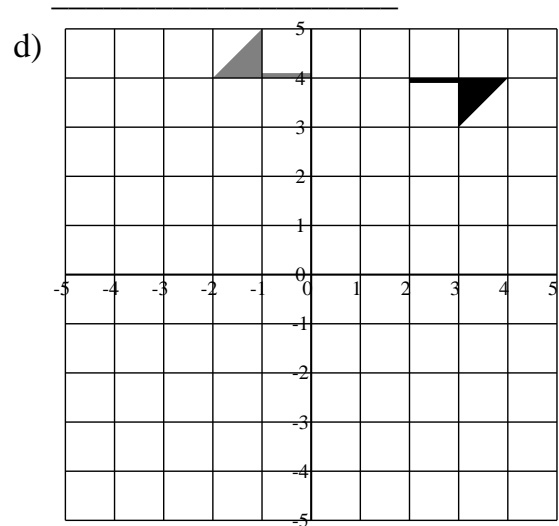
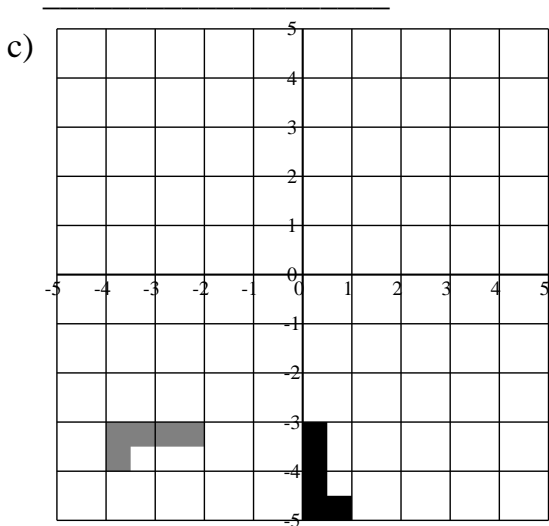
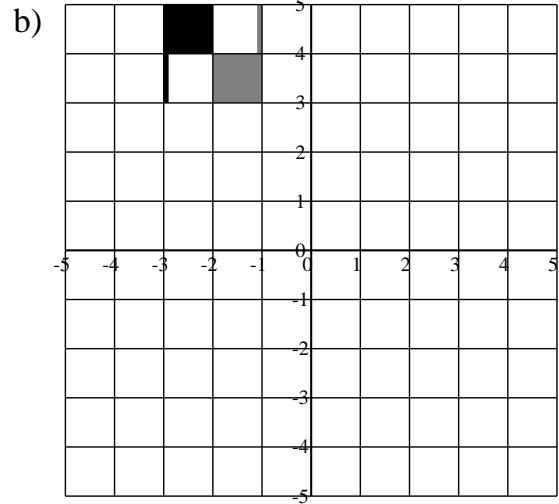
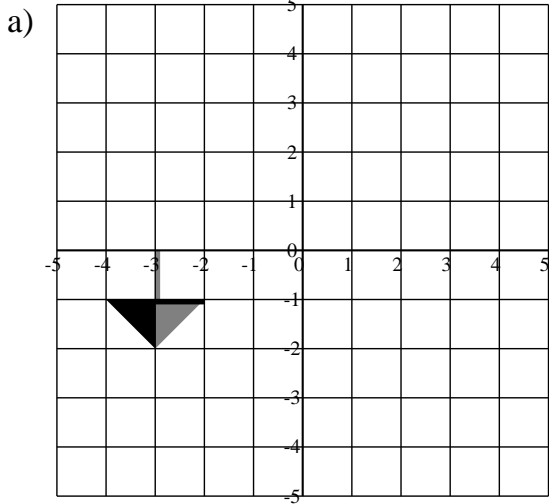


Rotate by 90° clockwise about $(0, -1)$

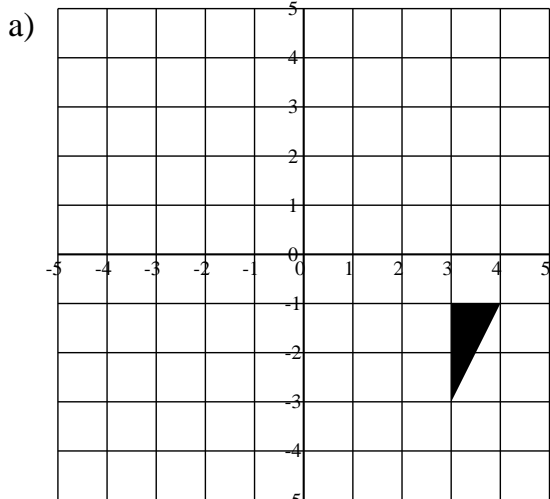


Rotate by 90° anticlockwise about $(1, 1)$

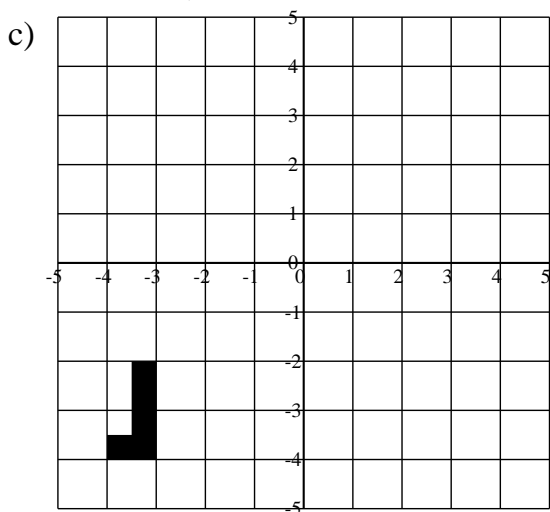
2: What transformation moves the grey shape onto the black shape?



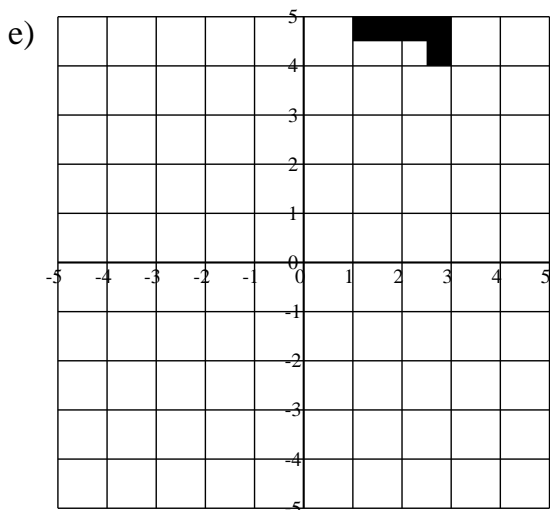
3: Transform the following shapes:



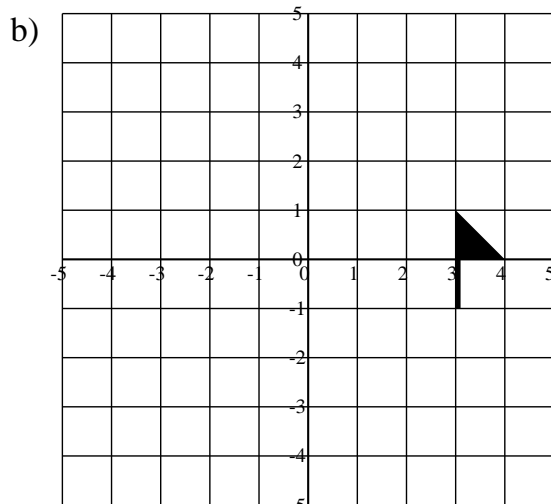
Reflect in $y = -x$



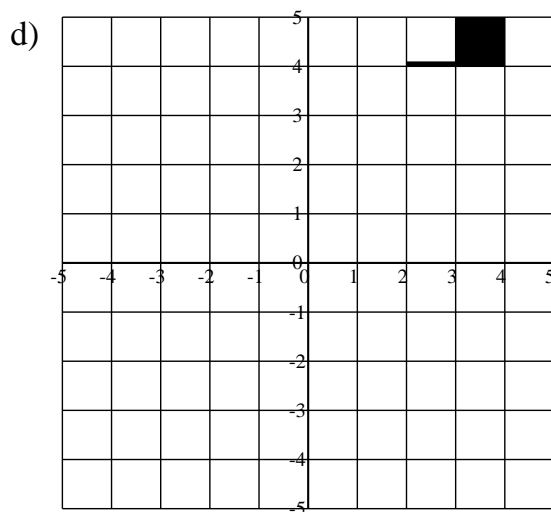
Reflect in $y = 0$



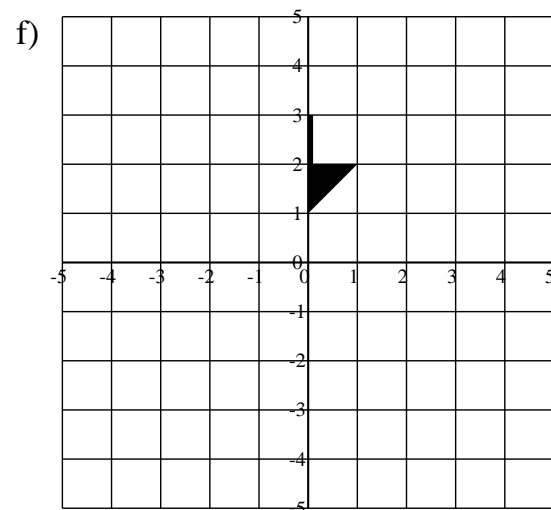
Reflect in $y = 0$



Reflect in $x = 0$

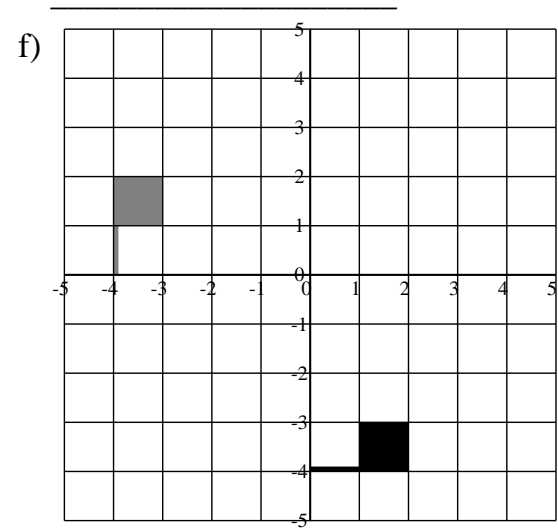
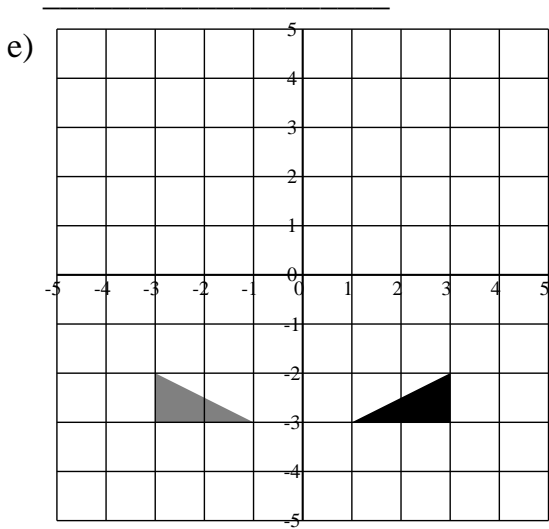
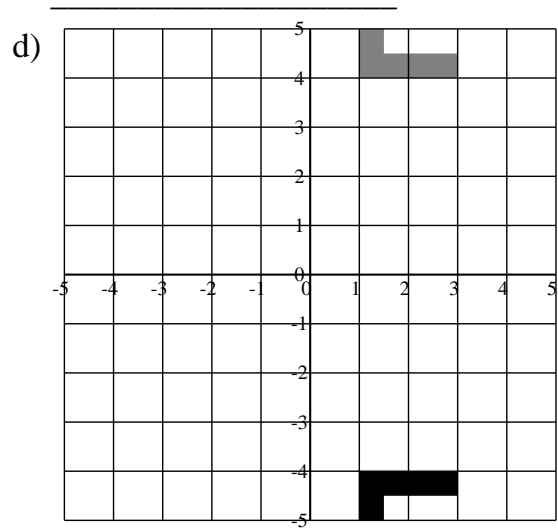
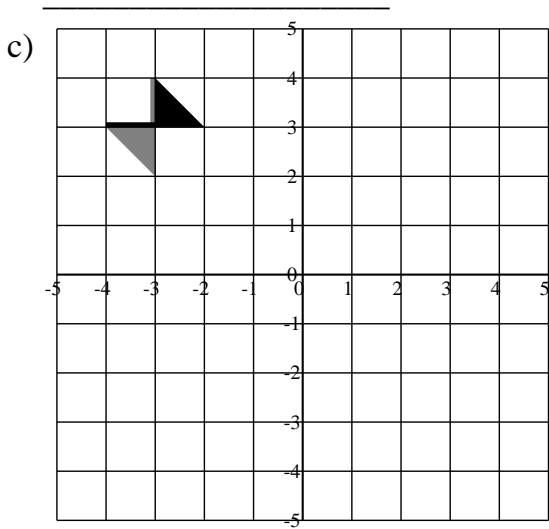
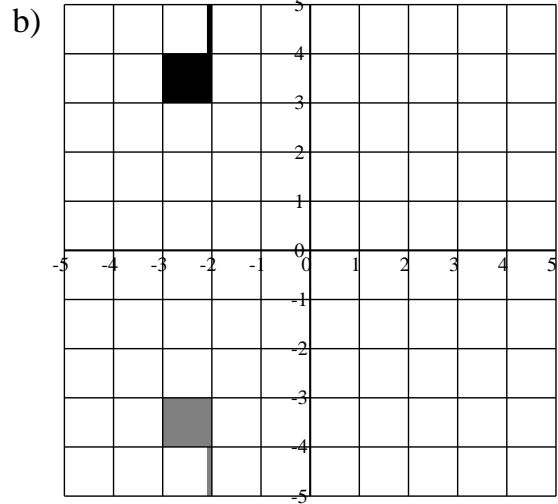
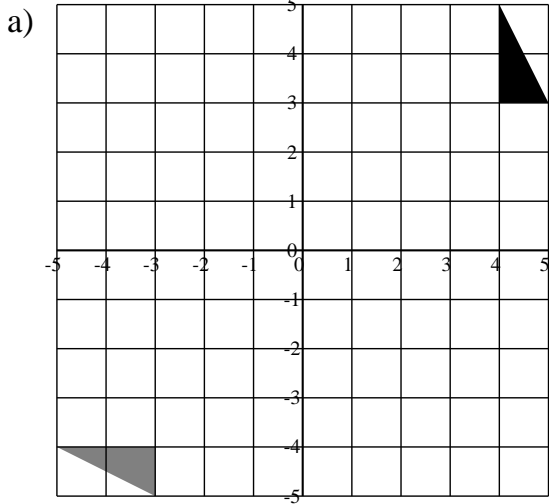


Reflect in $y = x$

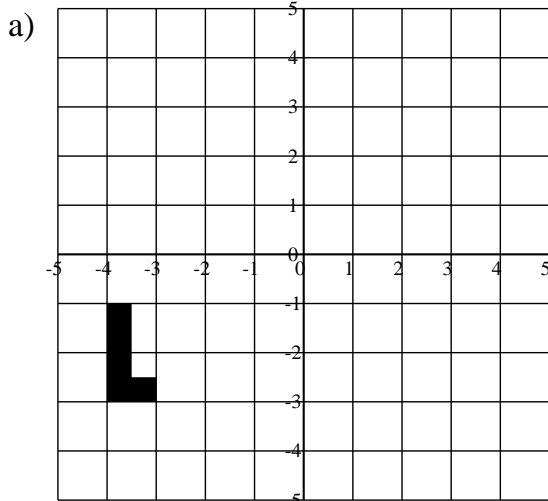


Reflect in $y = -x$

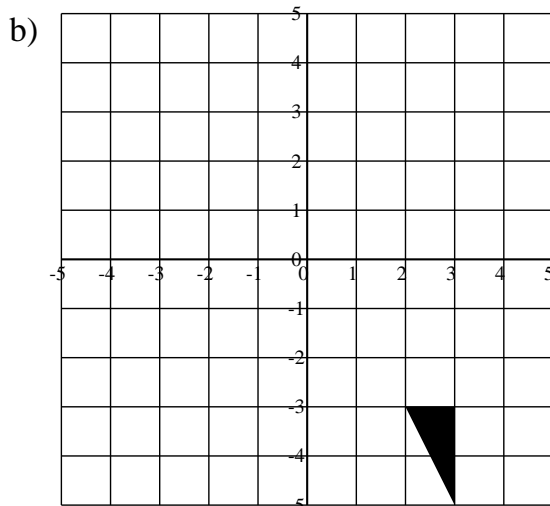
4: What transformation moves the grey shape onto the black shape?



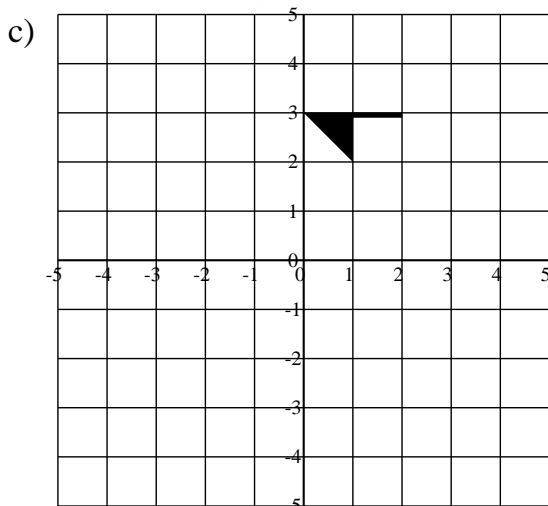
5: Transform the following shapes:



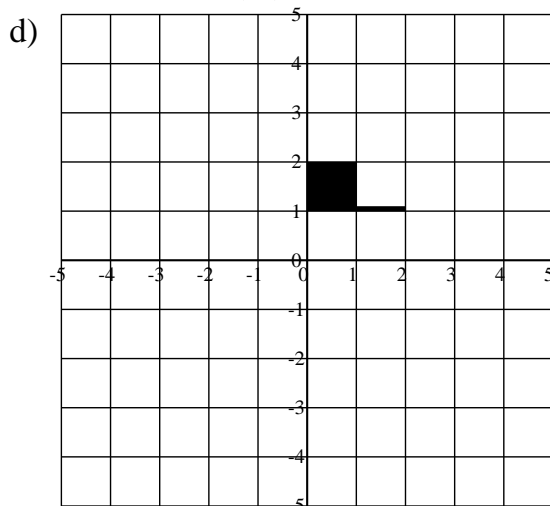
Translate by $\begin{pmatrix} 0 \\ 5 \end{pmatrix}$



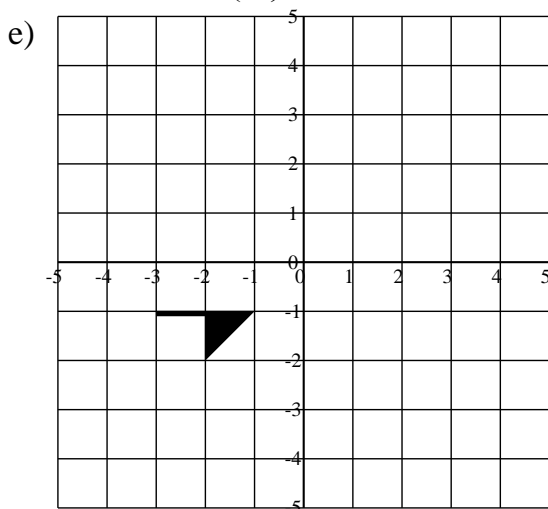
Translate by $\begin{pmatrix} -3 \\ 3 \end{pmatrix}$



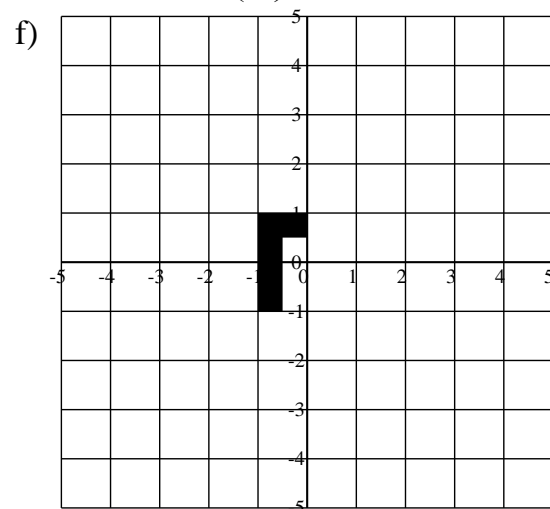
Translate by $\begin{pmatrix} -4 \\ -3 \end{pmatrix}$



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

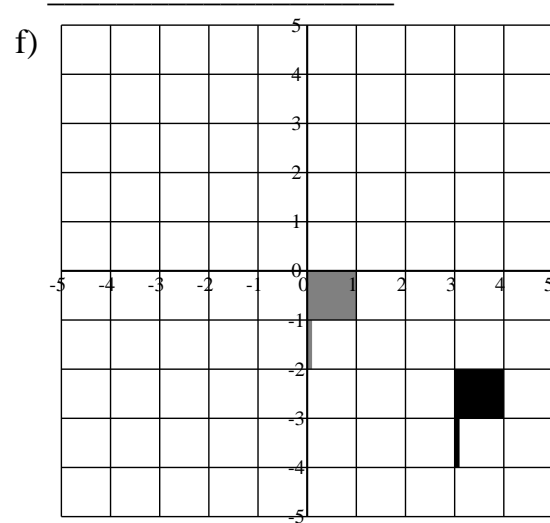
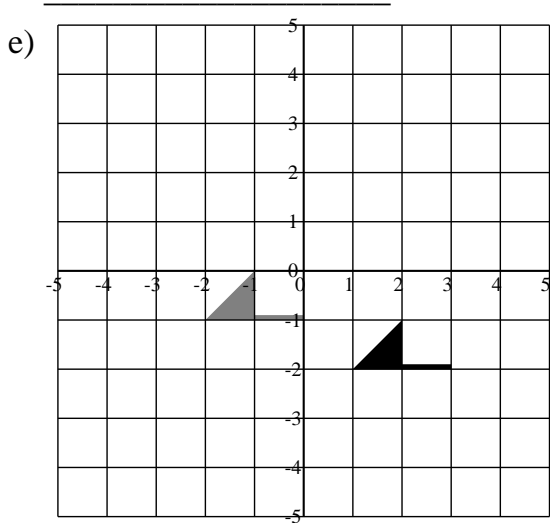
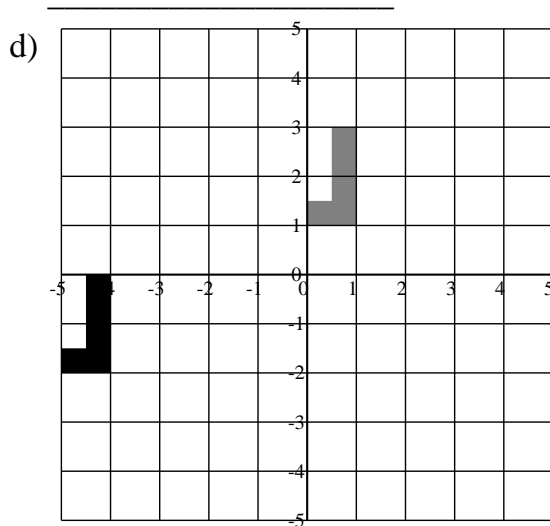
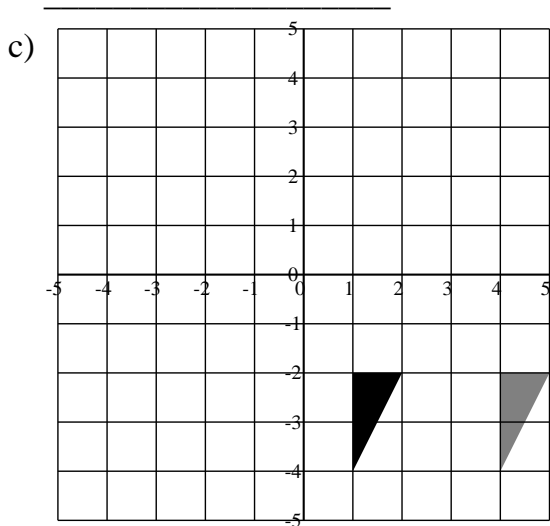
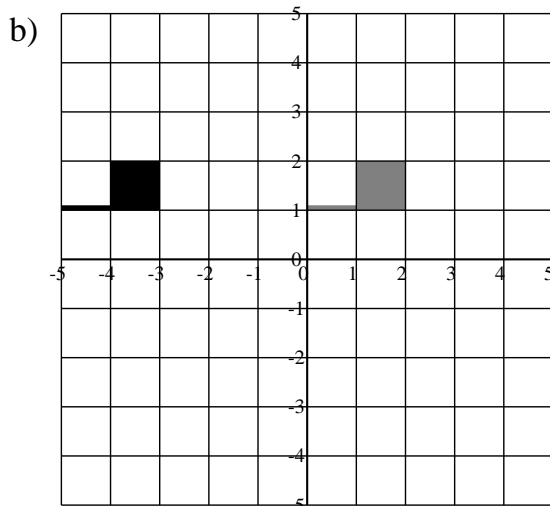
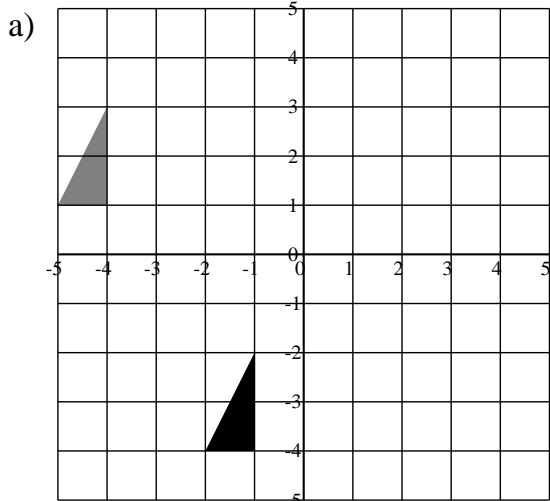


Translate by $\begin{pmatrix} 2 \\ 4 \end{pmatrix}$

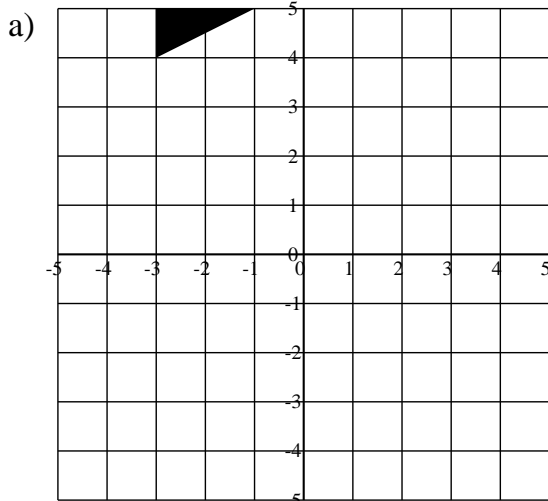


Translate by $\begin{pmatrix} -3 \\ -1 \end{pmatrix}$

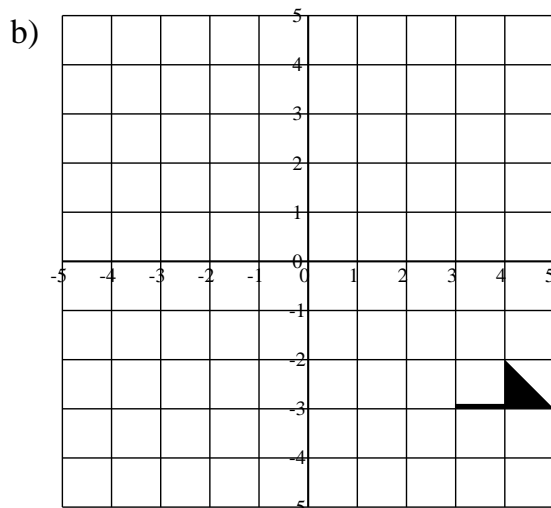
6: What transformation moves the grey shape onto the black shape?



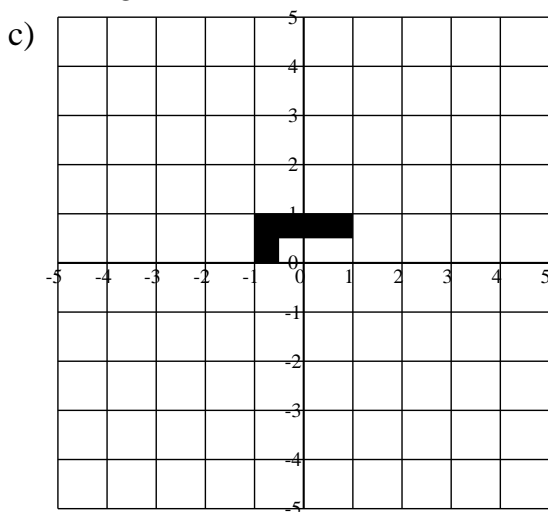
7: Transform the following shapes:



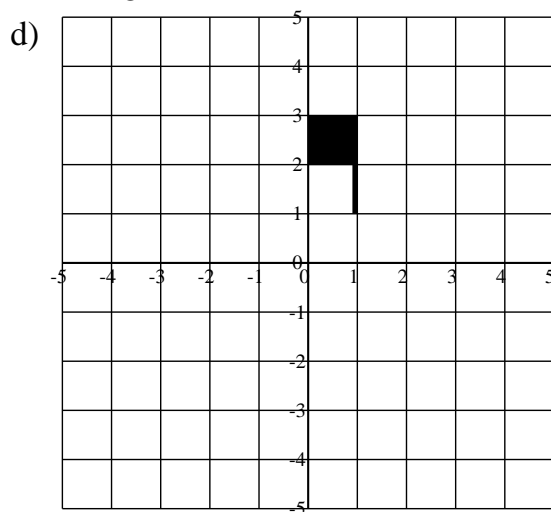
Enlarge with scale factor 3, centre $(-2, 5)$



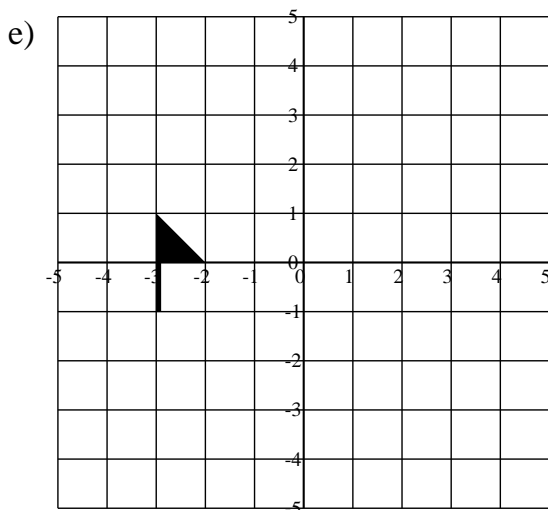
Enlarge with scale factor 4, centre $(5, -3)$



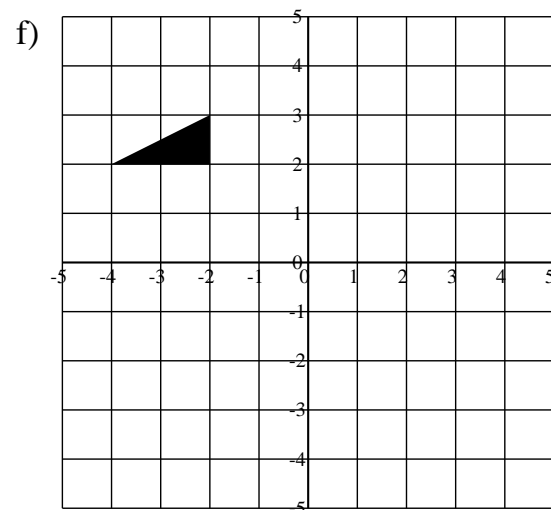
Enlarge with scale factor 2, centre $(2, 0)$



Enlarge with scale factor 3, centre $(0, 3)$

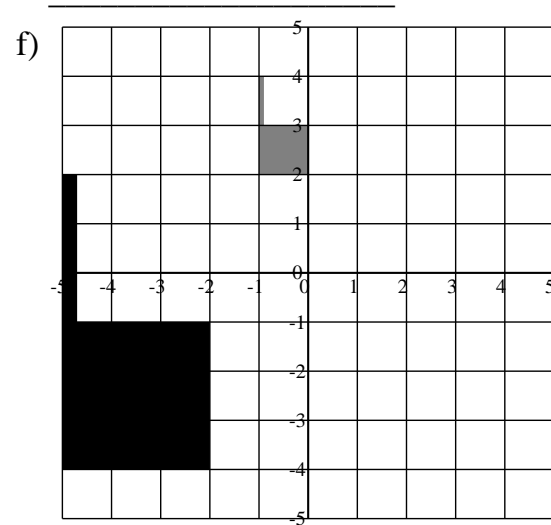
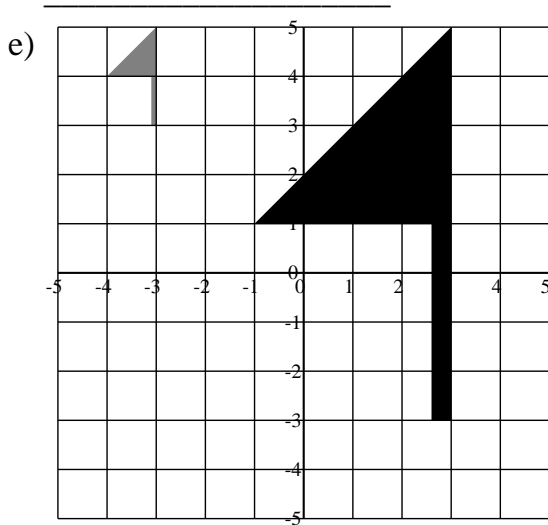
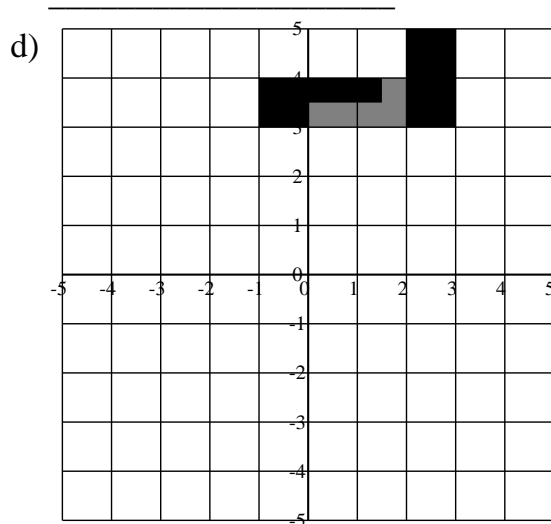
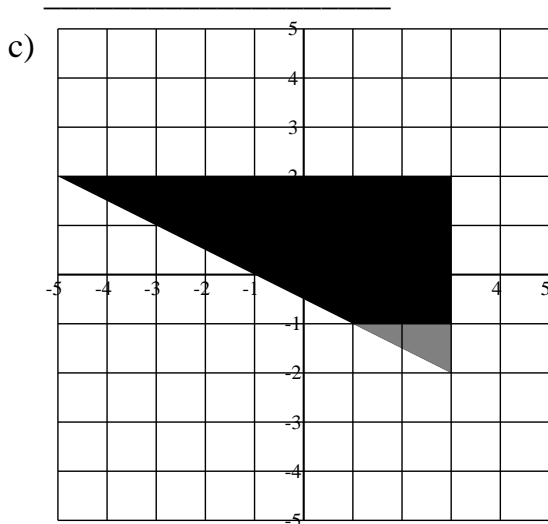
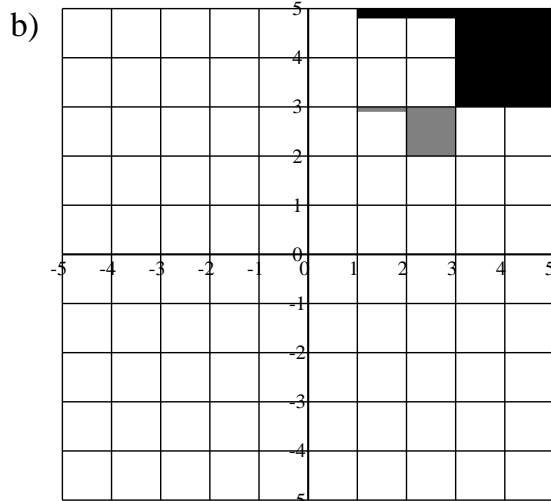
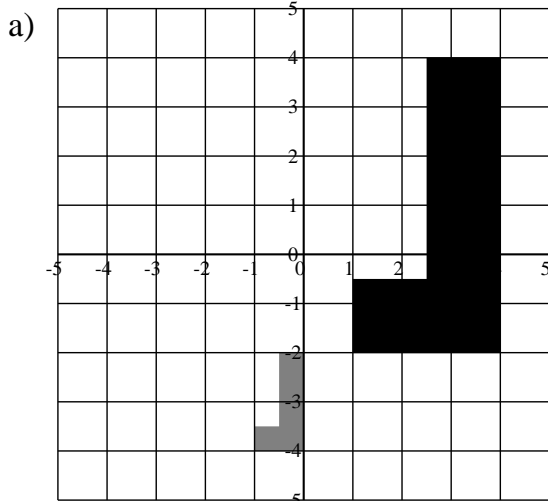


Enlarge with scale factor 4, centre $(-4, 0)$



Enlarge with scale factor 2, centre $(-4, 1)$

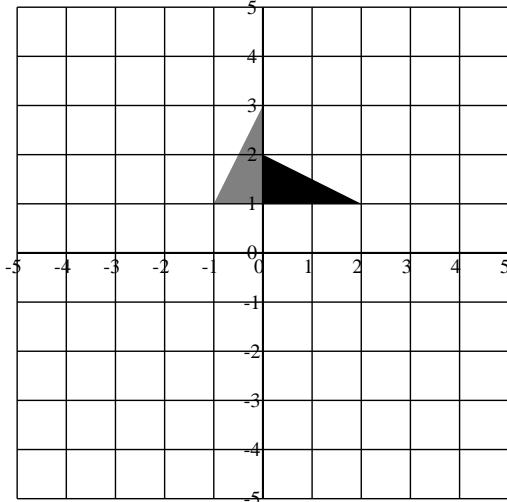
8: What transformation moves the grey shape onto the black shape?



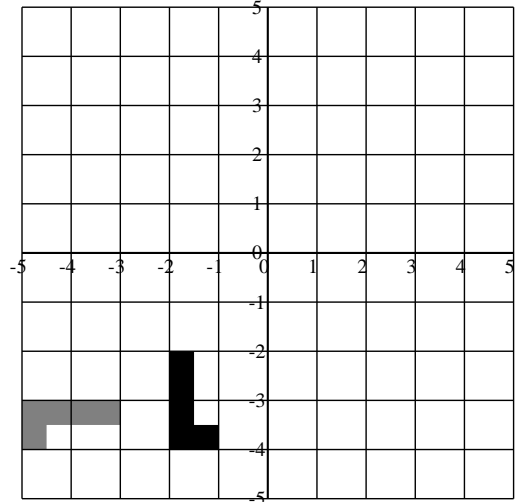
Answers: Demo Transformation Questions

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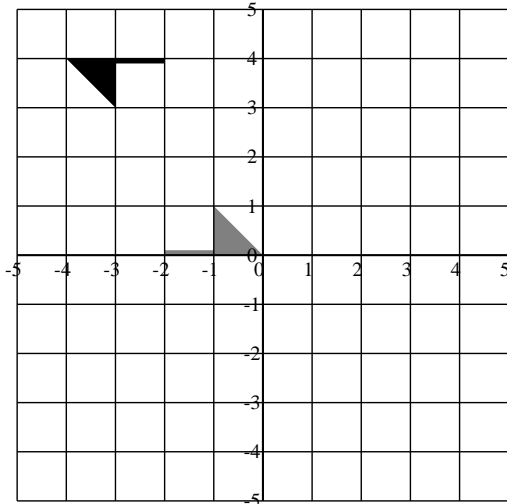
1: a)



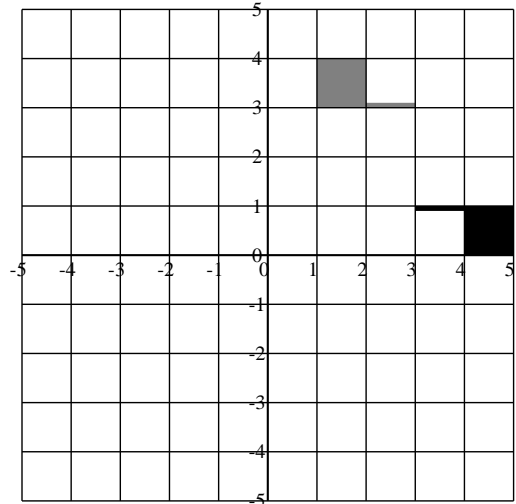
b)



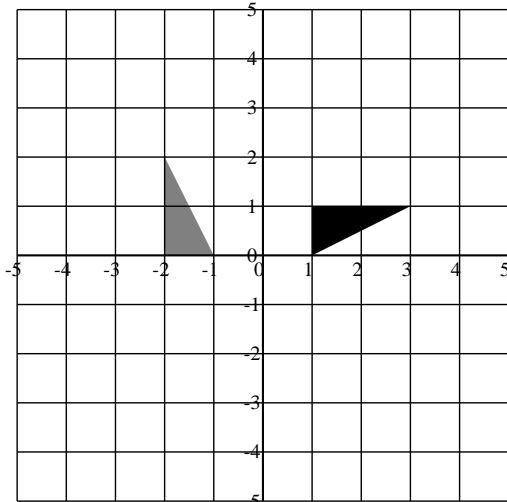
c)



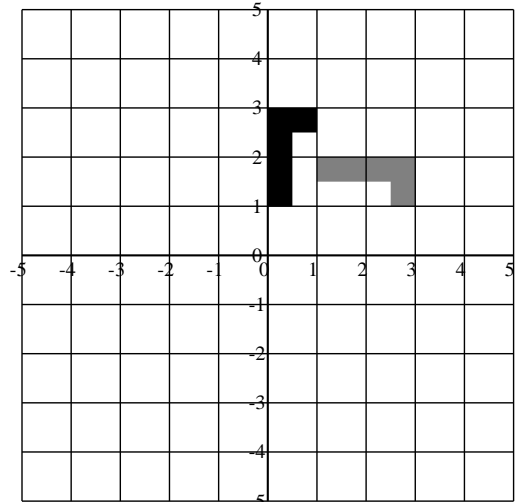
d)



e)



f)



2: a) Rotation of 90° clockwise about $(-3, -1)$

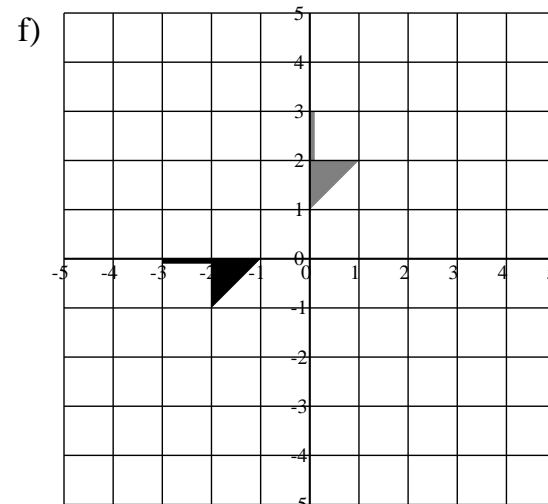
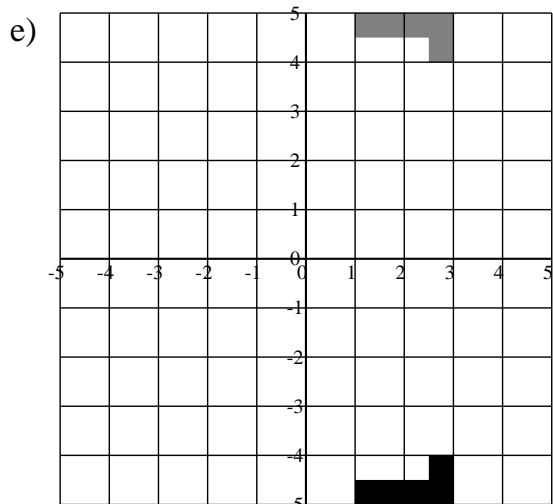
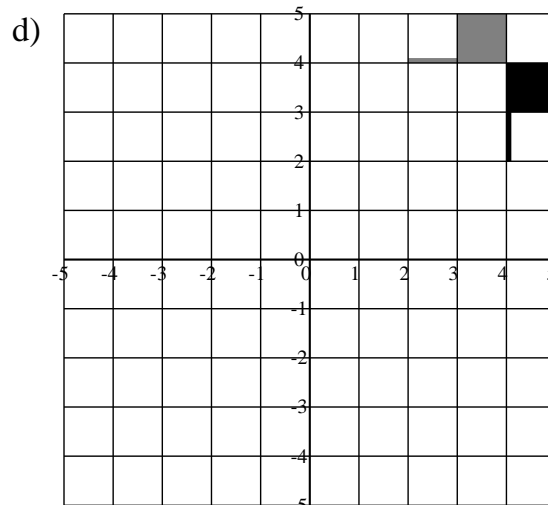
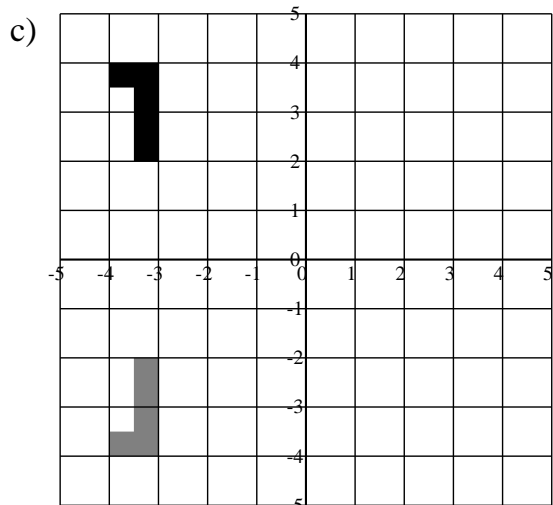
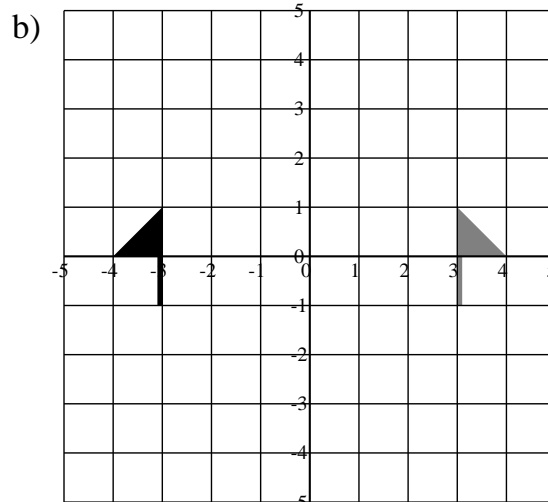
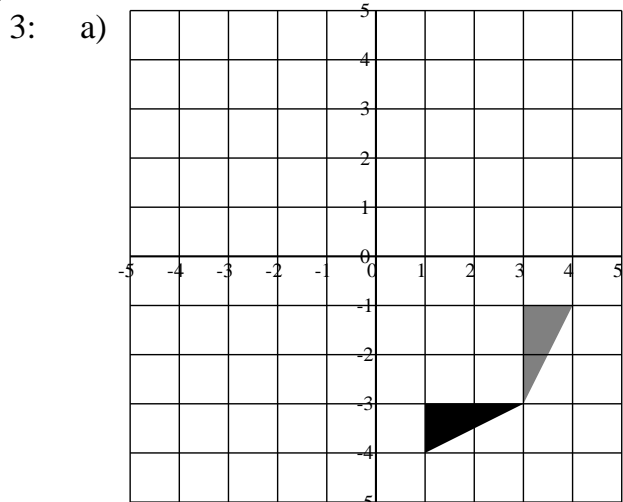
b) Rotation of 180° about $(-2, 4)$

c) Rotation of 90° anticlockwise about $(-1, -2)$

d) Rotation of 180° about $(1, 4)$

e) Rotation of 90° clockwise about $(-2, -3)$

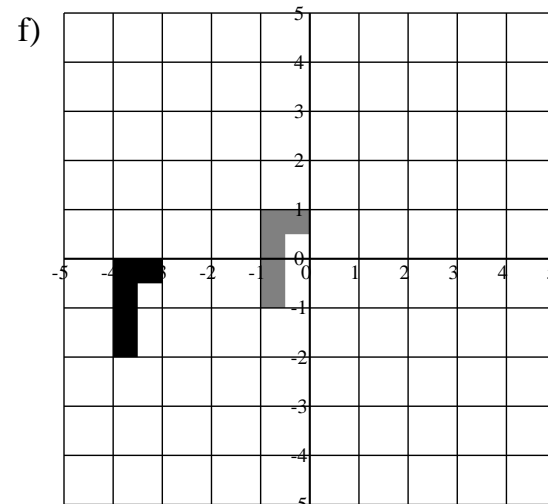
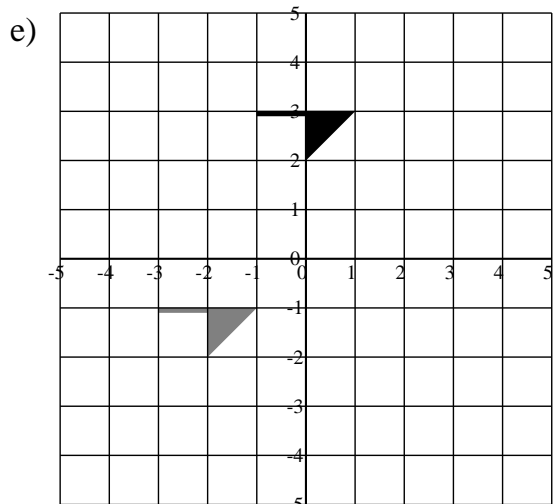
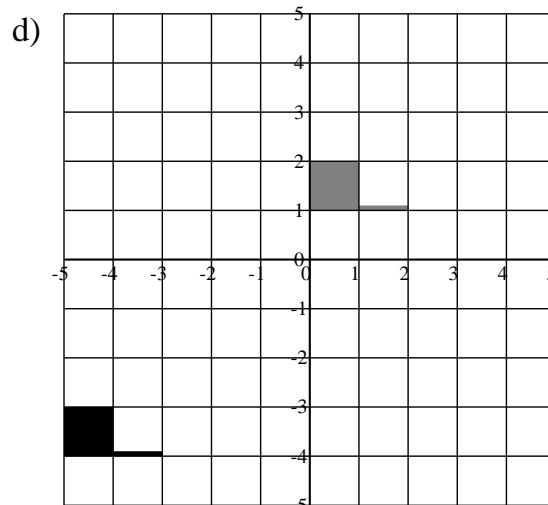
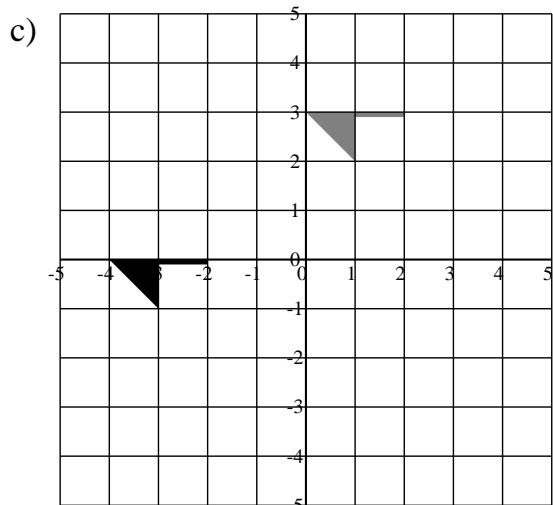
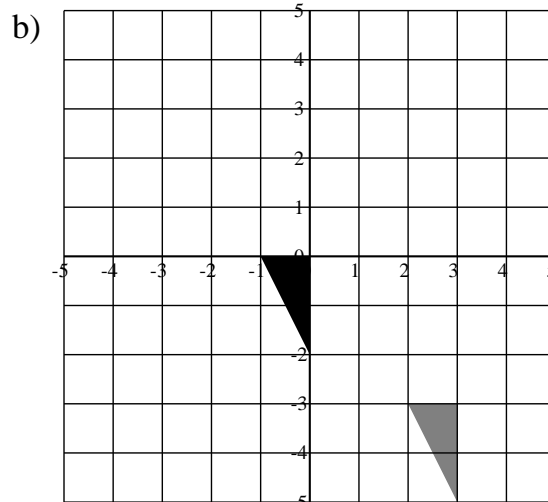
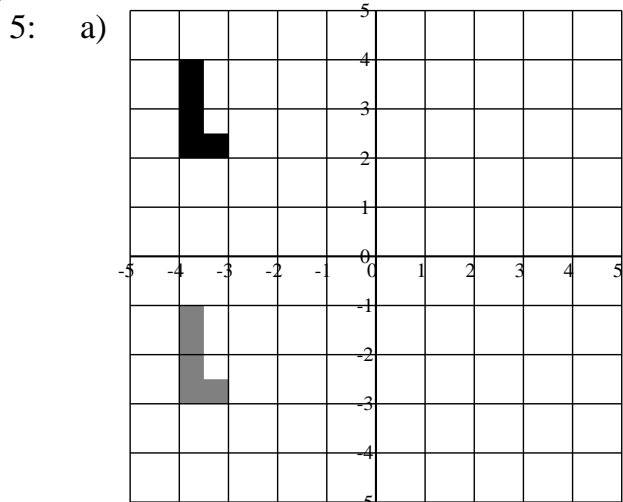
f) Rotation of 90° anticlockwise about $(2, -2)$



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

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

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



6: a) Translation of $\begin{pmatrix} 3 \\ -5 \end{pmatrix}$

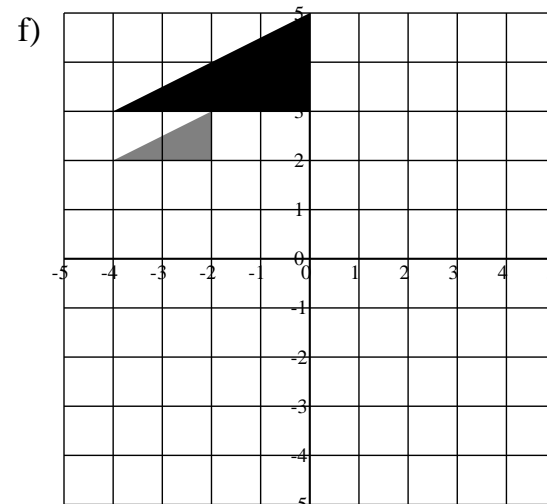
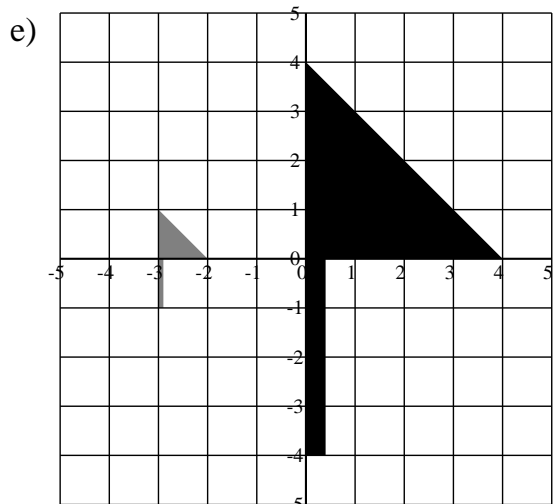
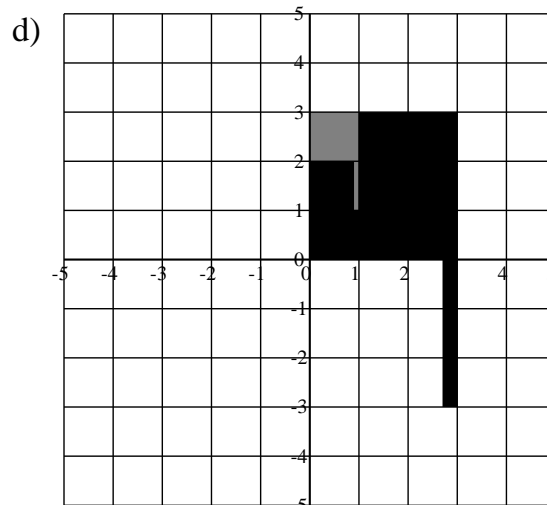
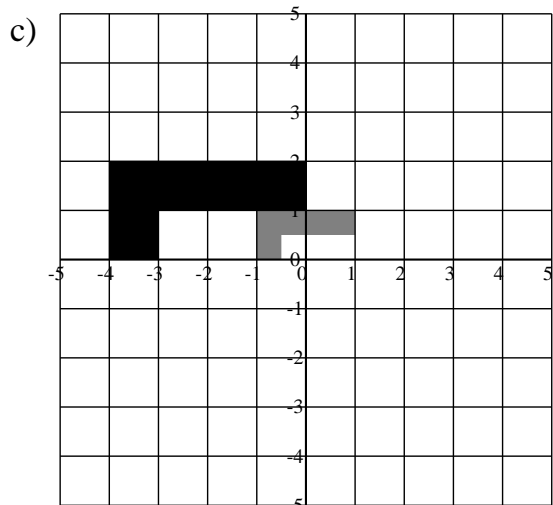
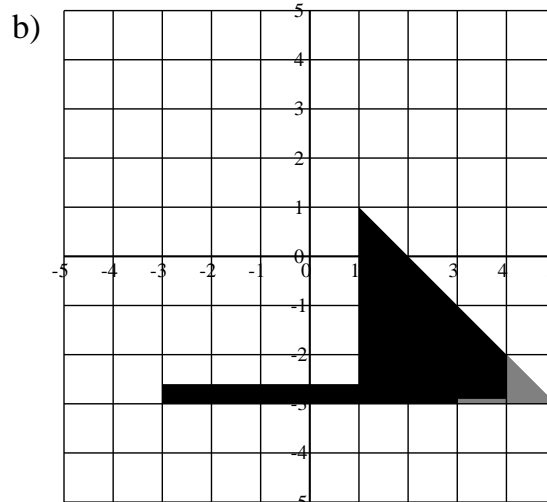
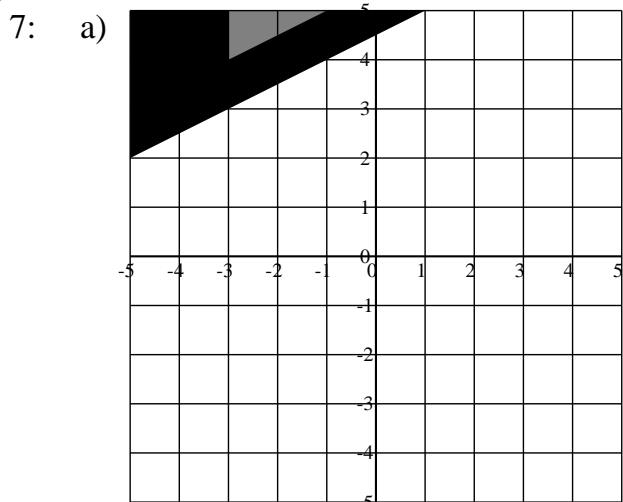
b) Translation of $\begin{pmatrix} -5 \\ 0 \end{pmatrix}$

c) Translation of $\begin{pmatrix} -3 \\ 0 \end{pmatrix}$

d) Translation of $\begin{pmatrix} -5 \\ -3 \end{pmatrix}$

e) Translation of $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$

f) Translation of $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$



- 8:
- a) Enlargement with scale factor 3, centre $(-2, -5)$
 - b) Enlargement with scale factor 2, centre $(1, 1)$
 - c) Enlargement with scale factor 4, centre $(3, -2)$
 - d) Enlargement with scale factor 2, centre $(1, 3)$
 - e) Enlargement with scale factor 4, centre $(-5, 5)$
 - f) Enlargement with scale factor 3, centre $(1, 5)$