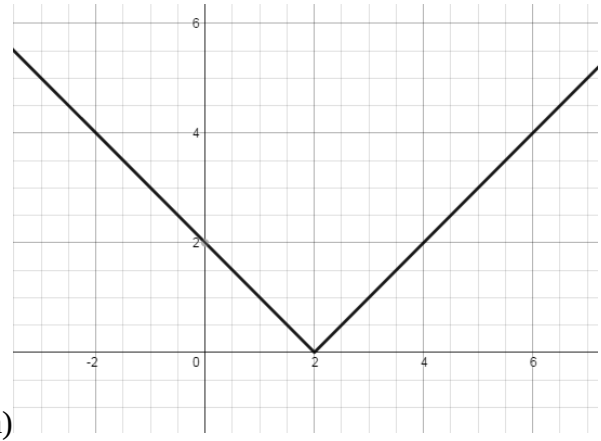
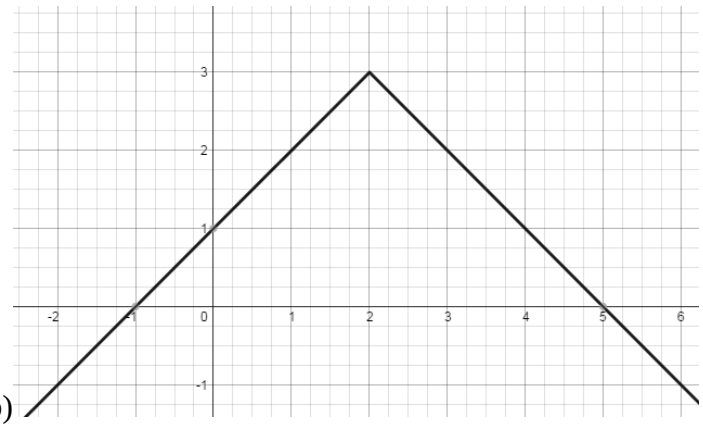
www.m4ths.com - Graph Transformations

Translations	Reflections
$f(x-a)$ moves in x direction by the vector $\begin{pmatrix} a \\ 0 \end{pmatrix}$.	$f(-x)$ reflects the graph in the y axis.
$f(x)+a$ moves in y direction by the vector $\begin{pmatrix} 0 \\ a \end{pmatrix}$.	$-f(x)$ reflects the graph in the x axis.

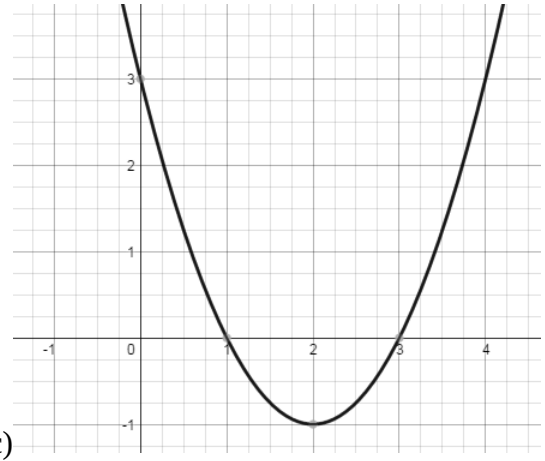
(a)



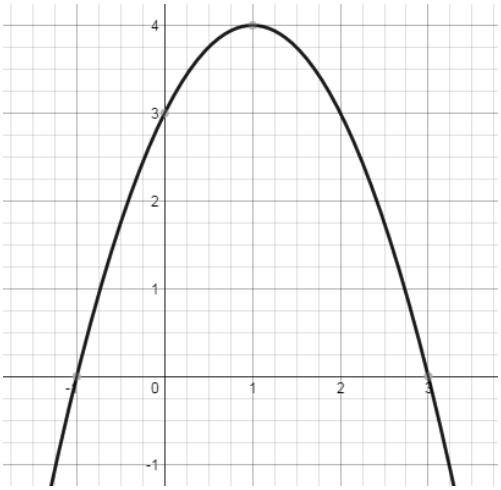
(b)



(c)



(d)



Apply each of the transformations below to **each** graph above (a, b, c and d).
Write down the maximum or minimum point **after** each transformation has been applied.

Translations

$f(x-1)$	$f(x+1)$	$f(x)+1$	$f(x)-1$	$f(x)+3$
$f(x+2)$	$f(x+2)+3$	$f(x-1)+2$	$5+f(x)$	$5+f(x-1)$

Reflections

$f(-x)$	$-f(x)$	$-f(-x)$