

Start
Match the
transformations

translation
 $\begin{pmatrix} -2 \\ 0 \end{pmatrix}$

$f(x) + 2$	translation $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$	$f(x-2) - 3$	$f(x-2) + 3$	translation $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$	$f(x+2)$
------------	--	--------------	--------------	---	----------

translation
 $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$

$f(x+3)$

 2

translation $\begin{pmatrix} -3 \\ 0 \end{pmatrix}$ scale factor $\frac{1}{2}$ y-direction	stretch scale factor 2 y-direction translation $\begin{pmatrix} 0 \\ 3 \end{pmatrix}$	$2f(x) + 3$	$f(-x)$	reflection in y-axis	translation $\begin{pmatrix} -3 \\ 0 \end{pmatrix}$ stretch scale factor $\frac{1}{2}$ y-direction
---	--	-------------	---------	-------------------------	--

$$\frac{f(x+3)}{2}$$

reflection in
 x -axis

$2f(x)$	$f(2x)$	stretch scale factor $\frac{1}{2}$ x -direction	reflection in x -axis translation $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$	$2-f(x)$	$-f(x)$
stretch scale factor 2 y -direction					
$f(x+2)+3$					
translation $\begin{pmatrix} -2 \\ 3 \end{pmatrix}$	$2f(x+3)$	translation $\begin{pmatrix} -3 \\ 0 \end{pmatrix}$ stretch scale factor 2 y -direction	$f(x+2)-3$	translation $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$	Finish