

## Transforming Functions

1. Given each equation for  $y = f(x)$ , indicate the new equation  $y = \pm af(\pm b(x - h)) + k$  after each transformation in the order stated:

<p>A reflection over the y-axis                      A shift of 3 units right                      A shift of 2 units up</p>	
<p>A shift of 2 units left                      A reflection over the x-axis                      A shift of 6 units down</p>	
<p>A reflection over the y-axis                      A shift of 4 units left                      A shift of 6 units up</p>	
<p>A reflection in both the y-axis                      A shift of 3 units right                      A reflection in both the x-axis                      A shift of 11 units down</p>	
<p>A shift of 2 units left,                      A reflection in the x-axis                      A shift of 6 units down</p>	
<p>A reflection in the <math>x - axis</math>                      A shift of 6 units down</p>	
<p>A horizontal reflection over the y-axis                      Then an reflection over the x-axis</p>	
<p>A horizontal expansion by a factor of 3                      Then shifted up by 5 units</p>	
<p>A vertical compression by a factor of 0.5                      A vertical reflection.                      Shift of 6 units down</p>	
<p>A Reflection in the y-axis and                      A Horizontal compression by a factor of 1/3.                      A shifted 3 units left.</p>	

Given  $y = f(x)$ , indicate the transformation equation and the new transformed equation.

<p>A reflection in both the y-axis            A horizontal expansion by a factor of 2,            A reflection in both the x-axis            A shifted of 11 units down</p>	
<p>A reflection in the <math>y - axis</math>,            A Horizontal compression by <math>1/3</math>,            A shift of 2 units left.</p>	
<p>A reflection in the <math>x - axis</math>            A shift of 6 units down</p>	
<p>A horizontal compression by a factor of 0.25,            A shift of 3 units left.            A vertical expansion by a factor of 2            A shift of 2 units up.</p>	
<p>A horizontal reflection over the <math>y-axis</math>            A Horizontal compression by 0.5            A reflection over the line <math>x-axis</math></p>	
<p>Horizontal reflection            Horizontal expansion by a factor 3            Horizontal Shift of 3 units left</p>	
<p>A vertical reflection            A vertical compression by a factor of 0.75            Vertical shift of 8 units up</p>	
<p>A horizontal compression by a factor of 0.25.            A vertical expansion by a factor of 2            A reflection over the x-axis.</p>	
<p>Horizontal reflection            Horizontal Expansion by a factor of 3            Horizontal Shift of 3 lefts left</p>	
<p>A vertical reflection            A vertical compression by a factor of 0.75            Vertical shift of 8 units up</p>	
<p>A reflection in the y-axis.            A horizontal expansion of 3            A horizontal shift of 3 units left            A vertical compression of 0.3.</p>	