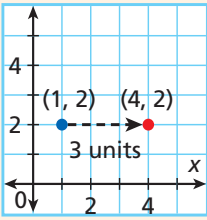
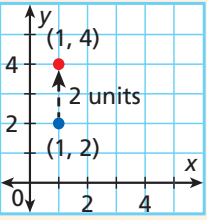
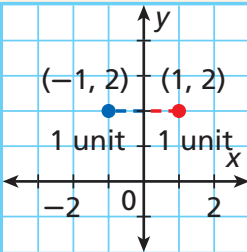
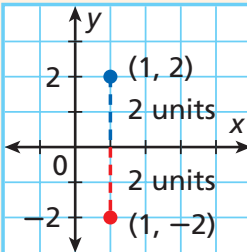


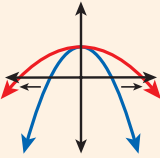
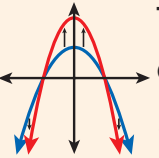
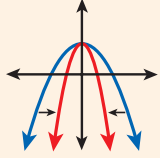
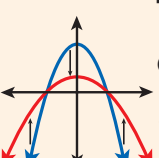
1-8 Exploring Transformations

Translations	
Horizontal Translation	Vertical Translation
<p>Each point shifts <i>right</i> or <i>left</i> by a number of units.</p>  <p>The x-coordinate changes.</p> $(1, 2) \rightarrow (1 + 3, 2)$ $(x, y) \rightarrow (x + h, y)$ <p>left if $h < 0$ right if $h > 0$</p>	<p>Each point shifts <i>up</i> or <i>down</i> by a number of units.</p>  <p>The y-coordinate changes.</p> $(1, 2) \rightarrow (1, 2 + 2)$ $(x, y) \rightarrow (x, y + k)$ <p>down if $k < 0$ up if $k > 0$</p>

Reflections	
Reflection Across y-axis	Reflection Across x-axis
<p>Each point flips across the y-axis.</p>  <p>The x-coordinate changes.</p> $(1, 2) \rightarrow (-1, 2)$ $(x, y) \rightarrow (-x, y)$	<p>Each point flips across the x-axis.</p>  <p>The y-coordinate changes.</p> $(1, 2) \rightarrow (1, -2)$ $(x, y) \rightarrow (x, -y)$

1-8

Exploring Transformations (continued)

Stretches and Compressions		
	Horizontal	Vertical
Stretch	<p>Each point is <i>pulled away</i> from the y-axis.</p>  <p>The x-coordinate changes.</p> <p>$(4, 0) \rightarrow (2(4), 0)$</p> <p>$(x, y) \rightarrow (bx, y)$</p> <p>$b > 1$</p>	<p>Each point is <i>pulled away</i> from the x-axis.</p>  <p>The y-coordinate changes.</p> <p>$(0, 4) \rightarrow (0, 2(4))$</p> <p>$(x, y) \rightarrow (x, ay)$</p> <p>$a > 1$</p>
Compression	<p>Each point is <i>pushed toward</i> the y-axis.</p>  <p>The x-coordinate changes.</p> <p>$(4, 0) \rightarrow (\frac{1}{2}(4), 0)$</p> <p>$(x, y) \rightarrow (bx, y)$</p> <p>$0 < b < 1$</p>	<p>Each point is <i>pushed toward</i> the x-axis.</p>  <p>The y-coordinate changes.</p> <p>$(0, 4) \rightarrow (0, \frac{1}{2}(4))$</p> <p>$(x, y) \rightarrow (x, ay)$</p> <p>$0 < a < 1$</p>