

**Math 11****Getting Information from Transformational Form**

**1.  $y + 3 = (x + 4)^2$**

**2.  $\frac{1}{3}(y - 1) = (x - 1)^2$**

**3.  $y - 1 = x^2$**

**4.  $2(y - 1) = x^2$**

**5.  $3y = (x + 1)^2$**

**6.  $4(y - 1) = x^2$**

**7.  $\frac{1}{3}(y + 2) = (x + 3)^2$**

**8.  $\frac{-1}{2}(y - 1) = (x - 7)^2$**

**9.  $\frac{-2}{3}(y + 6) = x^2$**

**10.  $4(y + 3) = x^2$**

**11.  $3y = x^2$**

**12.  $y + 4 = x^2$**

<b>Vertex</b>	<b>Stretch Factor</b>	<b>Equation of Axis of Symmetry</b>	<b>Direction of Opening</b>	<b>Domain</b>	<b>Range</b>	<b>Maximum/Minimum Value</b>
<b><math>(-4, -3)</math></b>	<b>1</b>	<b><math>x = -4</math></b>	<b>Upward</b>	<b><math>\{x   x \in \mathbb{R}\}</math></b>	<b><math>\{y   y \geq -3, y \in \mathbb{R}\}</math></b>	<b>Minimum <math>(-4, -3)</math></b>

<b>(1, 1)</b>	<b>3</b>	<b><math>x = 1</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq 1, y \in \mathbb{R}\}$	<b>Minimum (1, 1)</b>
<b>(0, 1)</b>	<b>1</b>	<b><math>x = 0</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq 1, y \in \mathbb{R}\}$	<b>Minimum (0, 1)</b>
<b>(0, 1)</b>	<b><math>\frac{1}{2}</math></b>	<b><math>x = 0</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq 1, y \in \mathbb{R}\}$	<b>Minimum (0, 1)</b>
<b>(-1, 0)</b>	<b><math>\frac{1}{3}</math></b>	<b><math>x = -1</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq 0, y \in \mathbb{R}\}$	<b>Minimum (-1, 0)</b>
<b>(0, 1)</b>	<b><math>\frac{1}{4}</math></b>	<b><math>x = 0</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq 1, y \in \mathbb{R}\}$	<b>Minimum (0, 1)</b>
<b>(-3, -2)</b>	<b>3</b>	<b><math>x = -3</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq -2, y \in \mathbb{R}\}$	<b>Minimum (-3, -2)</b>
<b>(7, 1)</b>	<b>2</b>	<b><math>x = 7</math></b>	<b>Downward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \leq 1, y \in \mathbb{R}\}$	<b>Maximum (7, 1)</b>
<b>(0, -6)</b>	<b><math>\frac{3}{2}</math></b>	<b><math>x = 0</math></b>	<b>Downward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \leq -6, y \in \mathbb{R}\}$	<b>Maximum (0, -6)</b>
<b>(0, -3)</b>	<b><math>\frac{1}{4}</math></b>	<b><math>x = 0</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq -3, y \in \mathbb{R}\}$	<b>Minimum (0, -3)</b>
<b>(0, 0)</b>	<b><math>\frac{1}{3}</math></b>	<b><math>x = 0</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq 0, y \in \mathbb{R}\}$	<b>Minimum (0, 0)</b>
<b>(0, -4)</b>	<b>1</b>	<b><math>x = 0</math></b>	<b>Upward</b>	$\{x x \in \mathbb{R}\}$	$\{y y \geq -4, y \in \mathbb{R}\}$	<b>Minimum (0, -4)</b>