

Math 11**Getting Information from Standard Form**

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

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

3. $y = x^2 + 1$

4. $y = \frac{1}{2}x^2 + 1$

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

6. $y = \frac{1}{4}x^2 + 1$

7. $y = 3(x + 3)^2 \cdot 2$

8. $y = -2(x - 7)^2 + 1$

9. $y = -\frac{3}{2}x^2 \cdot 6$

10. $y = \frac{1}{4}x^2 \cdot 3$

11. $y = \frac{1}{3}x^2$

12. $y = x^2 \cdot 4$

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

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