

## Converting to Standard Form

Date \_\_\_\_\_ Period \_\_\_\_\_

**CLASS EXAMPLES: Convert each quadratic function to standard form.**

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

$$\begin{aligned} & \text{Handwritten work: } (x+3)(x+3) \\ & x^2 + 3x + 3x + 9 \\ & x^2 + 6x + 9 - 3 \\ & y = x^2 + 6x + 6 \end{aligned}$$

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

$$\begin{aligned} & \text{Handwritten work: } (x-3)(x-3) \\ & x^2 - 3x - 3x + 9 \\ & x^2 - 6x + 9 + 1 \\ & y = x^2 - 6x + 10 \end{aligned}$$

**HOMEWORK: Convert each quadratic function to standard form.**

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

4)  $y = (x+3)^2 + 3$

5)  $y = (x+2)^2 - 1$

6)  $y = (x+1)^2 + 1$

**CLASS EXAMPLES: Convert each quadratic function to standard form.**

$$7) y = 3(x-3)^2 + 4$$

$$\begin{aligned} & \text{Handwritten work: } 3(x-3)(x-3) \\ & 3(x^2 - 6x + 9) + 4 \\ & 3x^2 - 18x + 27 + 4 \\ & y = 3x^2 - 18x + 31 \end{aligned}$$

$$8) y = -(x-3)^2 + 4$$

$$\begin{aligned} & \text{Handwritten work: } -(x-3)(x-3) \\ & -(x^2 - 6x + 9) + 4 \\ & -x^2 + 6x - 9 + 4 \\ & y = -x^2 + 6x - 5 \end{aligned}$$

**HOMEWORK: Convert each quadratic function to standard form.**

9)  $y = -(x+2)^2 - 4$

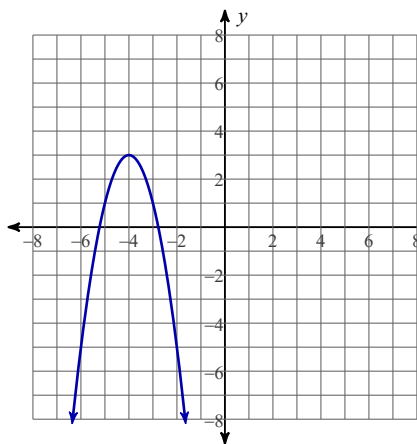
10)  $y = -3(x-4)^2 - 4$

11)  $y = -2(x+1)^2 - 1$

12)  $y = 2(x-3)^2 - 1$

**CLASS EXAMPLES: Write each quadratic function in standard form.**

13)



$$y = -2(x+4) + 3$$

$$(x+4)(x+4)$$

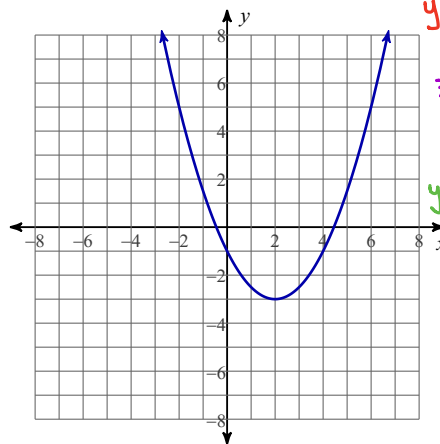
$$x^2 + 4x + 4x + 16$$

$$-2(x^2 + 8x + 16) + 3$$

$$-2x^2 - 16x - 32 + 3$$

$$y = -2x^2 - 16x - 29$$

14)



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

$$(x-2)(x-2)$$

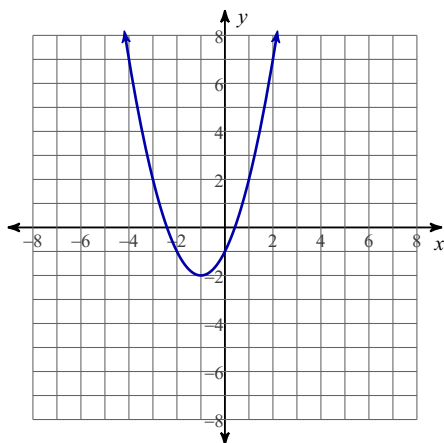
$$\frac{1}{2}(x^2 - 4x + 4)$$

$$\frac{1}{2}x^2 - 2x + 2 - 3$$

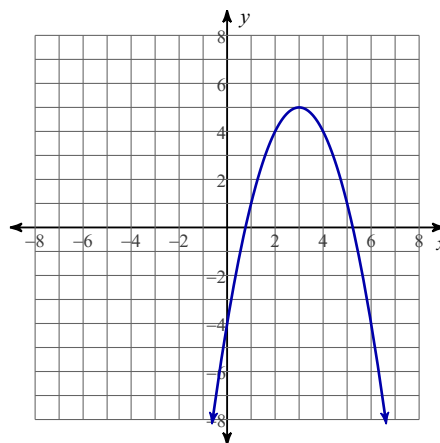
$$y = \frac{1}{2}x^2 - 2x - 1$$

**HOMEWORK: Write each quadratic function in standard form.**

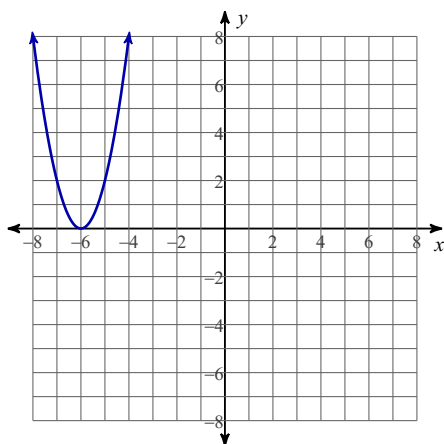
15)



16)



17)



18)

