

PC11

Standard Equation of a Quadratic Function

$$y = ax^2 + bx + c$$

where $a \neq 0$, and $a, b, c \in \mathbb{R}$

To convert the vertex form to standard form, follow these steps:

- Expand the brackets (distribute = FOIL) = apply the exponent of 2
- Distribute the value of "a" and/or the "-" when applicable
- Collect like terms
- Ensure that the terms of the polynomial are written in descending order

Example 1: Express $y = -3(x + 5)^2 - 1$ in standard form.

Example 2: Express $f(x) = -(x + 7)^2$ in standard form.

Example 3: Express $g(x) = -0.8x^2 + 1$ in standard form.