

To write $f(x)$ in Standard Form.Steps

- ① Rewrite the function with parentheses around x^2 and x terms
- ② If the coefficient of x^2 is not 1, then factor out this value
- ③ Calculate the Perfect Square Value by dividing the coefficient of the x term by 2 and then squaring it
- ④ Rewrite the function by adding and subtracting the PSV inside the parentheses
- ⑤ Factor the trinomial inside the parentheses
- ⑥ Combine like terms:
 - Distribute the value outside the 1st set of parentheses
 - Combine values at end of function

ex $f(x) = -2x^2 - 4x + 3$

① $(-2x^2 - 4x) + 3$

② $-2(x^2 + 2x) + 3$

③ P.S.V. = $\left(\frac{2}{2}\right)^2 = 1$

④ $-2(x^2 + 2x + 1 - 1) + 3$

⑤ $-2((x+1)^2 - 1) + 3$

⑥ $-2(x+1)^2 + 2 + 3$

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

Quadratic Form

$$f(x) = -2x^2 - 4x + 3$$

$$f(x) = ax^2 + bx + c$$

Standard Form

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

$$f(x) = A(x+B)^2 + C$$