The Quadratic Formula

Suppose $ax^2 + bx + c = 0$, $a, b, c \in \mathbb{R}$, $a \neq 0$.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$ax^2 + bx + c = 0$$
$$x^2 + \frac{b}{a}x + \frac{c}{a} = 0$$

$$x^2 + mx + n = 0$$
$$x^2 + mx + \left(\frac{m}{2}\right)^2 - \left(\frac{m}{2}\right)^2 + n = 0$$
$$\left(x + \frac{m}{2}\right)^2 - \left(\frac{m}{2}\right)^2 + n = 0$$
$$\left(x + \frac{m}{2}\right)^2 = \left(\frac{m}{2}\right)^2 - n$$
$$x = -\frac{m}{2} \pm \sqrt{\left(\frac{m}{2}\right)^2 - n}$$