The Quadratic Formula

Use the Quadratic formula instead of solving by factoring

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

Solve

① $x^2 + 3x - 1 = 0$

$a = 1 \quad b = 3 \quad c = -1$

$x = \frac{-3 \pm \sqrt{9 - 4(1)(-1)}}{2(1)}$

$x = \frac{-3 \pm \sqrt{9+4}}{2}$

$x = \frac{-3}{2} \pm \frac{\sqrt{13}}{2}$

② $2x^2 + 4x - 1 = 0$

$a = 2 \quad b = 4 \quad c = -1$

$x = \frac{-4 \pm \sqrt{16 - 4(2)(-1)}}{2(2)}$

$x = \frac{-4 \pm \sqrt{16+8}}{4}$

$x = \frac{-4 \pm \sqrt{24}}{4}$

$x = \frac{-4}{4} \pm \frac{2\sqrt{6}}{4}$

$x = -1 \pm \frac{\sqrt{6}}{2}$

Plug into the quadratic formula

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Slowly simplify the square root

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Split up denominator and simplify if possible