Math 11 • Quadratic Equations

Solve by Factoring

step 1, clean up and write in order
step 2, factor
step 3, write each factor = 0 and solve

[#1] $x^2 - 2x = 15$ [#2] $6x^2 = 9x$ [#3] $3x^2 - 4 = 11x$

[#4] $x^2 + 30 = 11x$ [#5] $2x(x - 4) = 4 - x$ [#6] $3x^2 - 3x - 60 = 0$

Solve by Isolating

[#1] $5x^2 - 45 = 0$

[#2] $8 - 9x^2 = 0$

[#3] $(3x + 1)^2 = 17$

[#4] $(6x - 8)^2 = 28$

[#5] $5x^2 + 10 = 0$

Solve by Completing the Square

step 1, clean up and write in order
step 2, divide away any a–value and complete the square
step 3, isolate x

[#1] $x^2 + 6x = 2$ [#2] $x^2 - 4 = 4x$ [#3] $x^2 - 8x + 18 = 0$

[#4] $x^2 - 3x - 2 = 0$ [#5] $5x^2 + 2x - 1 = 0$

Solve by Formula

step 1, clean up and write in order
step 2, pull out a, b, and c
step 3, plug into formula and simplify

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

[#1] $9x^2 - 2 = 5x$ [#2] $5x^2 + 2x - 1 = 0$ [#3] $2(x^2 - 1) = x(1 - 2x)$

[#4] $21x^2 + 8x - 5 = 0$