

Solving Quadratic Equations, Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}; \quad ax^2 + bx + c = 0$$

Algorithm

1. Place everything on one side, zero on the other side.
2. Label a, b and c
3. Substitute into the Quadratic Formula

Example Solve by the Quadratic Formula $2x^2 = 5x + 2$

1. $2x^2 - 5x - 2 = 0$
2. $a = 2$, $b = -5$ and $c = -2$
3. $x = \frac{-(-5) \pm \sqrt{((-5)^2 - 4(2)(-2))}}{(2)(2)}$

$$x = \frac{5 \pm \sqrt{25 + 16}}{4} = \frac{5 \pm \sqrt{41}}{4}$$

Solve using the Quadratic Formula

1. $2x^2 + 7x + 3 = 0$

2. $x^2 - x = 20$

3. $6x^2 = x + 2$

4. $8x^2 + 2x - 3 = 0$

5. $x^2 + 7x + 12 = 0$

6. $10x^2 = 2 - x$

7. $8x^2 + 2x - 1 = 0$

8. $4x^2 = 11x + 3$

9. $2x^2 + 15x - 8 = 0$

10. $2x^2 = 5x + 3$