

# Quadratic Equations



**i. Solve the following quadratic equations:**

- $x(x + 3) = 0$

- $x(x - 6) = 0$

- $(x + 5)(x - 9) = 0$

- $x^2 = 9$

- $x^2 - 100 = 0$

- $(x + 3)^2 = 25$

**ii. Solve the following equations using factorisation:**

- $x^2 + 11x + 10 = 0$

- $x^2 + 2x - 8 = 0$

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

- $x^2 - 4x + 12 = 4x$

- $x^2 - 7x - 8 = 0$

- $x^2 - 2x + 1 = 0$

- $x^2 + 4x - 12 = 0$

- $x^2 + x - 30 = 0$

- $x^2 - 10x + 21 = 0$

- $3x^2 + 6x = 9$

- $2x^2 - 11x + 5 = 0$

- $3x^2 - 5x - 8 = 0$

**iii. Solve the following equations using completing the square (leave in surd form where appropriate):**

- $x^2 - 8x = -16$

- $x^2 + 24x - 25 = 0$

- $x^2 = 6 - x$

- $x^2 + 4x - 10 = 0$

- $x^2 - 10x + 5 = 0$

- $x^2 - x - 42 = 0$

- $x^2 - 3x = 5$

- $2x^2 + 11x + 12 = 0$

**iv. Solve the following equations using the quadratic formula (you may use a calculator - give answers to 2 d.p.):**

- $x^2 - 2x - 8 = 0$

- $x^2 + 48 = 14x$

- $3x^2 + 10x - 8 = 0$

- $2x^2 - 7x + 4 = 0$

- $3x^2 - 7x - 9 = 0$