Maths with Melissa

Solving Quadratic Equations by Factorising Worksheet

Solve each quadratic equation below by factorising. Show your working for each step. Write your final answers clearly.

1. Solve: $x^2 - 5x + 6 = 0$
2. Solve: $x^2 + 7x + 12 = 0$
3. Solve: $x^2 - 9 = 0$
4. Solve: $2x^2 - 8x = 0$
5. Solve: $x^2 - 4x - 21 = 0$
6. Solve: $x^2 + 2x - 15 = 0$
7. Solve: $x^2 - 16x + 64 = 0$
8. Solve: $x^2 - 1 = 0$
9. Solve: $3x^2 + 6x = 0$
10. Solve: $x^2 + 10x + 21 = 0$

Answer Key

1. $x^2 - 5x + 6 = (x - 2)(x - 3) = 0$ Solutions: $x = 2, x = 3$
2. $x^2 + 7x + 12 = (x + 3)(x + 4) = 0$ Solutions: $x = -3, x = -4$
3. $x^2 - 9 = (x - 3)(x + 3) = 0$ Solutions: $x = 3, x = -3$
4. $2x^2 - 8x = 2x(x - 4) = 0$ Solutions: $x = 0, x = 4$
5. $x^2 - 4x - 21 = (x - 7)(x + 3) = 0$ Solutions: $x = 7, x = -3$
6. $x^2 + 2x - 15 = (x + 5)(x - 3) = 0$ Solutions: $x = -5, x = 3$
7. $x^2 - 16x + 64 = (x - 8)^2 = 0$ Solution: $x = 8$
8. $x^2 - 1 = (x - 1)(x + 1) = 0$ Solutions: $x = 1, x = -1$
9. $3x^2 + 6x = 3x(x + 2) = 0$ Solutions: $x = 0, x = -2$
10. $x^2 + 10x + 21 = (x + 3)(x + 7) = 0$ Solutions: $x = -3, x = -7$