Extra Content for Foundation GCSE

97. Solving Quadratic Equations Algebraically

Practice Questions

1. Solve $x^2 - 5x + 6 = 0$ by factorising.
2. Solve $x^2 - 7x + 12 = 0$ by factorising.
3. Solve $x^2 - 3x - 10 = 0$ by factorising.
4. Solve $x^2 - 9 = 0$ using the difference of two squares.
5. Solve $2x^2 - 8x = 0$ by factorising.
6. Solve $x^2 + 2x - 15 = 0$ using the quadratic formula.
7. Solve $x^2 - 4x - 5 = 0$ by factorising.
8. Solve $3x^2 - 12x + 9 = 0$ by first dividing by 3.
9. Solve $x^2 + 6x - 7 = 0$ by completing the square.
10. Graph the equation $y = x^2 - 4x + 3$ and identify its roots.

Scenario Questions

1. The area of a rectangular garden is $x^2 - 5x + 6$. Solve for possible lengths.
2. A ball is thrown, and its height is given by $h = -x^2 + 6x$. When does it hit the ground?
3. A path is built with area $x^2 - 7x + 12$. Find two possible widths.
4. A store sells a product at $x^2 - 3x - 10$ pounds. Find the values of x when profit is zero.
5. A bridge's arch is modeled by $y = -x^2 + 4x + 3$. Find where it touches the ground.
6. A rocket's height follows $h = 2x^2 - 8x$. Find when it reaches 0m again.
7. The revenue from ticket sales is $R = x^2 + 2x - 15$. Find when revenue is zero.
8. A pool's dimensions satisfy $x^2 - 4x - 5 = 0$. Find possible values for x.
9. A projectile follows $y = x^2 + 6x - 7$. Find when it returns to the ground.
10. A company's profit follows $P = 3x^2 - 12x + 9$. Find when profit is zero.

97. Solving Quadratic Equations Algebraically

Practice Questions

1. $x = 2$ or $x = 3$
2. $x = 3$ or $x = 4$
3. $x = 5$ or $x = -2$
4. $x = 3$ or $x = -3$
5. $x = 0$ or $x = 4$
6. $x = 3$ or $x = -5$
7. $x = 5$ or $x = -1$
8. $x = 1$ or $x = 3$
9. $x = 1$ or $x = -7$
10. Roots at $x = 1$ and $x = 3$

Scenario Questions

1. Lengths: $x = 2$ or $x = 3$
2. Hits the ground at $x = 0$ or $x = 6$
3. Widths: $x = 3$ or $x = 4$
4. $x = 5$ or $x = -2$
5. Touches the ground at $x = -1$ or $x = 5$
6. Reaches 0m at $x = 0$ or $x = 4$
7. Revenue is zero at $x = 3$ or $x = -5$
8. $x = 5$ or $x = -1$
9. Returns to the ground at $x = 1$ or $x = -7$
10. Profit is zero at $x = 1$ or $x = 3$