O Level Maths

Topic: Factorisation

Instructions

Answer all questions. Show working where necessary. Use your knowledge of factorisation techniques to solve the problems.

Practice Problems

1. Factorise the expression: $x^2 + 5x + 6$.

2. Factorise completely: $4x^2 - 9$.

3. Factorise the expression: $x^2 - 7x + 10$.

4. Factorise: $2x^2 + 8x$.

5. Factorise the expression: $x^2 - 4x - 12$.

6. Factorise: $9x^2 - 16$.

7. Factorise the quadratic expression: $x^2 + 10x + 21$.

8. Factorise completely: $3x^2 - 12x + 9$.

Word Problems

1. A rectangle has an area given by the expression $x^2 + 7x + 12$. Factorise the expression to find the length and width of the rectangle.

2. A triangle's area is given by $x^2 + 5x - 24$. Find its factors.

3. The perimeter of a rectangle is given by $2x^2 + 8x$. Factorise the expression to find the factors that represent the length and width.

Multiple-Choice Questions

1. Factorise: $x^2 + 5x + 6$.

    A. $(x + 1)(x + 6)$

    B. $(x + 2)(x + 3)$

    C. $(x + 3)(x + 2)$

    D. $(x + 6)(x + 1)$

2. Factorise: $4x^2 - 9$.

    A. $(2x + 3)(2x - 3)$

    B. $(2x + 9)(2x - 3)$

    C. $(4x + 3)(x - 3)$

    D. $(4x - 9)(x + 3)$

3. Which of the following is the correct factorisation of $x^2 + 7x + 12$?

    A. $(x + 3)(x + 4)$

    B. $(x + 2)(x + 6)$

    C. $(x + 4)(x + 3)$

    D. $(x + 5)(x + 2)$

4. Factorise: $x^2 - 9x + 18$.

    A. $(x - 3)(x - 6)$

    B. $(x - 2)(x - 9)$

    C. $(x - 1)(x - 18)$

    D. $(x - 3)(x - 3)$

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