Table of Contents

JPMethod Polynomials & Quadratics

Algebraic Expressions

Polynomials & Quadratic Equations

Algebraic Expressions

This workbook teaches polynomial manipulation and quadratic equation solving through progressive exercises.

- Start with polynomial multiplication
- Learn multiplication using algebraic formulas
- Master factorisation techniques
- Work with square roots and quadratic equations
- Explore graphs of quadratic functions
- Apply the Pythagorean theorem

Regular practice with polynomials builds strong algebraic foundations.

Section 1. Multiplication of Polynomials

Multiply the polynomials and simplify your answer.

(1) $2a(2a+4) =$

(2) $2a(3a+9) =$

(3) $(x+1)(x+1) =$

(4) $3a(3a-9) =$

(5) $5a(2a+1) =$

(6) $(y+3)(y-2) =$

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Guide for Parents and Tutors

This JPMethod Polynomials & Quadratics workbook provides structured practice for Algebraic Expressions.

How to Use This Workbook

- Work through sections in order
- Complete practice problems before checking solutions
- Review mistakes to improve understanding
- Practice regularly for best results

Understanding Polynomial Operations

This workbook covers fundamental polynomial operations including multiplication, factoring, and solving quadratic equations. Each section builds on previous concepts.

Common Challenges

- Students may confuse distribution with simple multiplication
- Sign errors are common when working with negative terms
- Factoring requires pattern recognition skills
- Quadratic formula needs careful substitution

Support Strategies

Encourage students to show all work and check answers by substitution. Visual aids and graph paper can help with understanding polynomial behavior.

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Section 1. Multiplication of Polynomials

Multiply the polynomials and simplify your answer.

(1) $2y(1y - 6) =$

(2) $(x + 4)(x - 5) =$

(3) $4a(3a + 6) =$

(4) $2a(1a + 5) =$

(5) $2y(2y - 8) =$

(6) $4y(1y + 5) =$

Section 1. Multiplication of Polynomials

Multiply the polynomials and simplify your answer.

(1) $3x(2x-7) =$

(2) $4x(1x-1) =$

(3) $(y-1)(y+2) =$

(4) $(y-4)(y+2) =$

(5) $4a(3a-7) =$

(6) $(x-2)(x+5) =$

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Section 1 - Solutions

1a-1: $4a^2 + 8a$

1a-2: $6a^2 + 18a$

1a-3: $x^2 + 2x + 1$

1a-4: $y^2 - 2y - 8$

1a-5: $10a^2 + 5a$

1a-6: $y^2 + 1y - 6$

1b-1: $4a^2 + 8a$

1b-2: $x^2 - 1x - 20$

1b-3: $12a^2 + 24a$

1b-4: $9a^2 - 27a$

1b-5: $10a^2 + 5a$

1b-6: $4y^2 + 20y$