



A Level Maths

Topic: Polynomial Division

Instructions

Answer all questions. Show complete working. Use polynomial division methods where appropriate.

Practice Questions

1. Perform the division of $2x^3 + 3x^2 - 5x + 6$ by $x + 2$ using long division.
2. Divide $3x^4 - 2x^3 + 4x^2 - 6x + 5$ by $x - 1$ using synthetic division.
3. Use polynomial division to divide $x^3 + 4x^2 - 6x + 8$ by $x - 2$.
4. Divide $6x^4 - 5x^3 + 2x^2 - x + 3$ by $2x^2 + x - 1$.
5. Divide $4x^3 + 7x^2 - 3x + 1$ by $x + 3$ using synthetic division.
6. Divide $x^3 - 4x^2 + 6x - 8$ by $x - 4$ using long division and find the quotient and remainder.
7. Perform the division of $x^4 + 3x^3 - 2x^2 + x - 5$ by $x + 1$ using long division.
8. Divide $5x^3 - 2x^2 + 3x - 6$ by $x - 2$ using synthetic division.

Multiple-Choice Questions

1. The quotient when $4x^3 + 6x^2 - 8x + 10$ is divided by $2x + 3$ is:
 - A. $2x^2 - 4x + 5$
 - B. $2x^2 + 3x - 1$
 - C. $2x^2 + 3x + 1$
 - D. $2x^2 + 2x + 3$

2. When dividing $x^4 - 4x^3 + 2x^2 - 5x + 6$ by $x - 1$, the remainder is:
- A. 1
 - B. -1
 - C. 5
 - D. -5
3. The result of dividing $2x^4 - 3x^3 + 5x^2 - 6x + 8$ by $x^2 - 1$ is:
- A. $2x^2 + x - 3$
 - B. $2x^2 + 3x - 4$
 - C. $2x^2 - 3x + 1$
 - D. $2x^2 - 2x + 4$
4. The quotient when $3x^3 + 5x^2 - 4x + 2$ is divided by $x + 1$ is:
- A. $3x^2 + 2x - 6$
 - B. $3x^2 + 5x - 6$
 - C. $3x^2 + 5x + 6$
 - D. $3x^2 + 4x + 6$
5. What is the remainder when $x^3 + 2x^2 - 3x + 1$ is divided by $x - 1$?
- A. 1
 - B. -1
 - C. 0
 - D. 2

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