

Step 0: Preparation

- Write both the dividend and divisor polynomials in descending order of powers.
- Insert terms with zero coefficients for any missing powers.

Step 1: Set Up the Division Format

- Arrange the problem in the long division format.
- Place the divisor to the left of the division symbol and the dividend underneath.

Step 2: Divide the Leading Terms

- Divide the leading term of the dividend by the leading term of the divisor.
- Write this result as the first term of the quotient.

Step 3: Multiply

- Multiply the entire divisor by the term you just wrote in the quotient.
- Write this product underneath the dividend, aligning like terms.

✓ Step 4: Subtract

- Subtract the product from the corresponding terms in the dividend.
- Bring down any remaining terms from the dividend.

Step 5: Repeat

- Treat the result of the subtraction as the new dividend.
- Repeat steps 2-4 until the degree of the remainder is less than the degree of the divisor.

Step 6: Write the Final Answer

- Express the result as: $\text{Dividend} \div \text{Divisor} = \text{Quotient} + (\text{Remainder} \div \text{Divisor})$
- If the remainder is zero, then the divisor is a factor of the dividend.