

Polynomial Vocabulary Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is a polynomial?

undefined. An expression with only one term

undefined. **An expression involving variables and coefficients with non-negative integer exponents** ✓

undefined. An equation with an equal sign

undefined. A number without variables

A polynomial is an expression involving variables and coefficients with non-negative integer exponents.

Which of the following are components of a polynomial?

undefined. **Coefficient** ✓

undefined. **Variable** ✓

undefined. **Exponent** ✓

undefined. Fraction

Components of a polynomial include coefficients, variables, and exponents.

Explain the difference between a monomial and a binomial.

A monomial has one term, while a binomial has two terms.

List the types of polynomials based on the number of terms.

1. What is a monomial?

A polynomial with one term.

2. What is a binomial?

A polynomial with two terms.

3. What is a trinomial?

A polynomial with three terms.

Types of polynomials include monomial, binomial, and trinomial.

What is the degree of the polynomial $3x^4 + 2x^3 - x + 7$?

undefined. 1

undefined. 2

undefined. 3

undefined. 4 ✓

The degree of the polynomial is 4, which is the highest exponent.

Part 2: Understanding and Interpretation

Which of the following statements about the degree of a polynomial is true?

undefined. It is the sum of all exponents in the polynomial.

undefined. It is the highest exponent of the variable in the polynomial. ✓

undefined. It is always an even number.

undefined. It is the number of terms in the polynomial.

The degree of a polynomial is the highest exponent of the variable in the polynomial.

Describe how to convert a polynomial into its standard form.

To convert a polynomial into standard form, arrange the terms in descending order of their exponents.

What is the standard form of the polynomial $2x + 5x^3 - 4x^2$?

undefined. $5x^3 - 4x^2 + 2x$ ✓

undefined. $2x - 4x^2 + 5x^3$

undefined. $5x^3 + 2x - 4x^2$

undefined. $2x + 5x^3 - 4x^2$

The standard form of the polynomial is $5x^3 - 4x^2 + 2x$.

Part 3: Application and Analysis

Apply the distributive property to expand the expression $(x + 3)(x - 2)$.

The expanded form of the expression is $x^2 + x - 6$.

Which of the following is the result of multiplying $(x + 1)(x - 1)$?

undefined. $x^2 + 1$

undefined. $x^2 - 1$ ✓

undefined. $x^2 - 2x + 1$

undefined. $x^2 + 2x + 1$

The result of multiplying $(x + 1)(x - 1)$ is $x^2 - 1$.

If a polynomial $P(x) = x^2 - 5x + 6$, what are its roots?

undefined. 2 and 3 ✓

undefined. -2 and -3

undefined. 1 and 6

undefined. -1 and -6

The roots of the polynomial are 2 and 3.

Analyze the polynomial $x^3 - 6x^2 + 11x - 6$ and determine its roots using factorization.

The roots can be found by factoring the polynomial into $(x - 1)(x - 2)(x - 3)$.

Which of the following expressions is a perfect square trinomial?

undefined. $x^2 + 4x + 4$ ✓

undefined. $x^2 - 4x + 4$ ✓

undefined. $x^2 + 2x + 1$ ✓

undefined. $x^2 - 2x + 1$ ✓

Expressions like $x^2 + 4x + 4$ and $x^2 - 4x + 4$ are perfect square trinomials.

Part 4: Evaluation and Creation

Evaluate the polynomial $P(x) = 2x^3 - 3x^2 + x - 5$ at $x = 2$.

Evaluating the polynomial at $x = 2$ gives $P(2) = 2(2)^3 - 3(2)^2 + 2 - 5 = 1$.

Create a polynomial of degree 3 with roots 1, -2, and 3. Write it in standard form.

1. What is the polynomial in standard form?

$x^3 - 2x^2 - 5x + 6$

The polynomial can be written as $P(x) = (x - 1)(x + 2)(x - 3) = x^3 - 2x^2 - 5x + 6$.

Which of the following polynomials can be factored as $(x - 2)(x + 3)$?

undefined. $x^2 + x - 6$ ✓

undefined. $x^2 - x - 6$

undefined. $x^2 + 5x + 6$

undefined. $x^2 - 5x + 6$

The polynomial that can be factored as $(x - 2)(x + 3)$ is $x^2 + x - 6$.