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# Polynomial Vocabulary Worksheet

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## Part 1: Building a Foundation

### What is a polynomial?

*Hint: Think about the definition involving terms and exponents.*

○ An expression with only one term
○ An expression involving variables and coefficients with non-negative integer exponents
○ An equation with an equal sign
○ A number without variables

### Which of the following are components of a polynomial?

*Hint: Consider the parts that make up a polynomial expression.*

☐ Coefficient
☐ Variable
☐ Exponent
☐ Fraction

### Explain the difference between a monomial and a binomial.

*Hint: Consider the number of terms in each expression.*

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

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*Hint: Think about the names given to polynomials with different numbers of terms.*

1. What is a monomial?

2. What is a binomial?

3. What is a trinomial?

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

*Hint: Look for the highest exponent in the polynomial.*

○ 1
○ 2
○ 3
○ 4

## Part 2: Understanding and Interpretation

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

*Hint: Consider the definition of the degree of a polynomial.*

☐ It is the sum of all exponents in the polynomial.
☐ It is the highest exponent of the variable in the polynomial.
☐ It is always an even number.
☐ It is the number of terms in the polynomial.

**Describe how to convert a polynomial into its standard form.**

*Hint: Think about the order of terms based on their degrees.*

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[ textarea ]

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

*Hint: Rearrange the terms by their degrees.*

○ 5x^3 - 4x^2 + 2x
○ 2x - 4x^2 + 5x^3
○ 5x^3 + 2x - 4x^2
○ 2x + 5x^3 - 4x^2

## Part 3: Application and Analysis

**Apply the distributative property to expand the expression (x + 3)(x - 2).**

*Hint: Use the FOIL method for binomials.*

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

*Hint: Consider the difference of squares.*

☐ x^2 + 1
☐ x^2 - 1
☐ x^2 - 2x + 1
☐ x^2 + 2x + 1

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

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*Hint: Use the quadratic formula or factorization.*

◯ 2 and 3
◯ -2 and -3
◯ 1 and 6
◯ -1 and -6

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

*Hint: Look for factors of the polynomial.*

**Which of the following expressions is a perfect square trinomial?**

*Hint: Consider the form of a perfect square trinomial.*

☐ x^2 + 4x + 4
☐ x^2 - 4x + 4
☐ x^2 + 2x + 1
☐ x^2 - 2x + 1

## Part 4: Evaluation and Creation

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

*Hint: Substitute x = 2 into the polynomial.*

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

*Hint: Use the roots to form factors of the polynomial.*

1. What is the polynomial in standard form?

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

*Hint: Expand the factors to find the polynomial.*

○ x^2 + x - 6
○ x^2 - x - 6
○ x^2 + 5x + 6
○ x^2 - 5x + 6

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