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Combining Like Terms Worksheet

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Part 1: Building a Foundation

What is a coefficient in an algebraic term?

Hint: Think about the part of the term that is a number.

○ A) The variable part of a term
○ B) The numerical part of a term
○ C) The exponent of a term
○ D) The entire term

Identify the like terms in the expression 3x + 4y + 5x.

Hint: Look for terms that have the same variable part.

☐ A) 3x and 4y
☐ B) 3x and 5x
☐ C) 4y and 5x
☐ D) All terms are like terms

Explain why 2x^2 and 3x are not like terms.

Hint: Consider the variables and their exponents.

List the components of the term 7xy^2.

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Hint: Think about the parts that make up the term.

1. Answer 1

> [   ]

2. Answer 2

> [   ]

3. Answer 3

> [   ]

Part 2: Understanding and Interpretation

Which of the following expressions is correctly simplified by combining like terms?

Hint: Look for expressions that combine terms with the same variable.

○ A) 2a + 3 b = 5ab
○ B) 4m + 5m = 9m
○ C) $x^2 + x = 2x^2$
○ D) $6y - 2y^2 = 4y^2$

Describe the process of combining like terms in the expression 6x + 3x - 2x.

Hint: Think about how you would group and add the terms.

> [   ]

Select all expressions that are simplified correctly.

Hint: Look for expressions that combine like terms accurately.

☐ A) 5x + 2x = 7x
☐ B) $3a^2 + 4a^2 = 7a^2$
☐ C) 2y + 3z = 5yz

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☐ D) x^2 + 2x^2 = 3x^2

Part 3: Application and Analysis

Simplify the expression 4x + 7 - 2x + 3.

Hint: Combine like terms and simplify the expression.

Given the expression 5a + 3 b - 2a + 4 b, combine like terms to simplify it.

Hint: Group the terms with the same variable together.

1. Simplified expression for a terms

2. Simplified expression for b terms

If x = 2, evaluate the expression after combining like terms: 3x + 4x - x.

Hint: First, combine the like terms, then substitute x with 2.

○ A) 12
○ B) 14
○ C) 16
○ D) 18

Analyze the expression 2x^2 + 3x - x^2 + 4 and explain the steps to simplify it.

Hint: Identify like terms and combine them.

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[textarea]

Part 4: Evaluation and Creation

Evaluate the correctness of the simplification 8a + 4 b - 3a + 2 b = 5a + 6 b. Provide reasoning for your answer.

Hint: Check if the terms were combined correctly.

[textarea]

Create an expression involving at least three different variables and simplify it by combining like terms.

Hint: Make sure to include terms with the same variable.

[textarea]

Propose a real-world scenario where combining like terms would be necessary, and describe how you would simplify the expression involved.

Hint: Think about situations involving quantities that can be combined.

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