

## Combining Like Terms Worksheet Answer Key PDF

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### Part 1: Building a Foundation

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**What is a coefficient in an algebraic term?**

- undefined. A) The variable part of a term  
**undefined. B) The numerical part of a term ✓**  
undefined. C) The exponent of a term  
undefined. D) The entire term

A coefficient is the numerical part of a term.

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

- undefined. A)  $3x$  and  $4y$   
**undefined. B)  $3x$  and  $5x$  ✓**  
undefined. C)  $4y$  and  $5x$   
undefined. D) All terms are like terms

The like terms are  $3x$  and  $5x$ .

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

**They are not like terms because they have different variable parts.**

**List the components of the term  $7xy^2$ .**

1. Answer 1  
**Coefficient**
2. Answer 2  
**Variable(s)**

3. Answer 3

### Exponent(s)

The components are the coefficient, variables, and exponents.

## Part 2: Understanding and Interpretation

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

undefined. A)  $2a + 3b = 5ab$

undefined. B)  $4m + 5m = 9m$  ✓

undefined. C)  $x^2 + x = 2x^2$

undefined. D)  $6y - 2y^2 = 4y^2$

The correct expression is  $4m + 5m = 9m$ .

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

You group the like terms and add their coefficients.

Select all expressions that are simplified correctly.

undefined. A)  $5x + 2x = 7x$  ✓

undefined. B)  $3a^2 + 4a^2 = 7a^2$  ✓

undefined. C)  $2y + 3z = 5yz$

undefined. D)  $x^2 + 2x^2 = 3x^2$  ✓

The correct expressions are  $5x + 2x = 7x$ ,  $3a^2 + 4a^2 = 7a^2$ , and  $x^2 + 2x^2 = 3x^2$ .

## Part 3: Application and Analysis

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

The simplified expression is  $2x + 10$ .

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

1. Simplified expression for a terms

**3a**

2. Simplified expression for b terms

**7b**

The simplified expression for a terms is 3a, and for b terms is 7b.

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

undefined. A) 12

**undefined. B) 14 ✓**

undefined. C) 16

undefined. D) 18

The evaluated expression equals 14.

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

**You combine  $2x^2$  and  $-x^2$ , and then combine  $3x$  and  $4$ .**

## Part 4: Evaluation and Creation

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

**The simplification is correct;  $8a - 3a = 5a$  and  $4b + 2b = 6b$ .**

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

**An example expression could be  $2x + 3y - x + 4y$ , which simplifies to  $x + 7y$ .**

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

**An example could be calculating total costs where similar items are grouped together.**