

ALGEBRAIC SIMPLIFICATION: COMBINING LIKE TERMS FOR STUDENTS PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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<https://algebraicsimplification.examzify.com>



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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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1. What is the simplified form of the expression $4x + 6 - 2x$?
- A. $2x + 6$
 - B. $6x + 6$
 - C. $4x + 2$
 - D. $2x + 4$
2. Simplify the expression: $5(2x + 3) - 3x$.
- A. $7x + 15$
 - B. $10x + 15$
 - C. $5x + 15$
 - D. $5x + 12$
3. True or False: Combining like terms can only be done with positive coefficients.
- A. True
 - B. False
 - C. Only for integers
 - D. Only for real numbers
4. What is the coefficient in the term $7xy$?
- A. 7
 - B. x
 - C. y
 - D. xy
5. What is the result of simplifying the expression $9m - 3m + 5n - 2n$?
- A. $9m + 3n$
 - B. $3m + 2n$
 - C. $6m + 3n$
 - D. $6m - 3n$
6. What is the result of combining the terms: $2a^2 + 3a^2 - a^2$?
- A. $6a^2$
 - B. $5a^2$
 - C. $4a^2$
 - D. $3a^2$

7. If $x = 2$, what is the result of simplifying $4x + x - 3$?

- A. 5
- B. 7
- C. 8
- D. 15

8. Combine like terms from the expression: $x - 2 - x + 3$.

- A. 5
- B. 1
- C. -2
- D. 3

9. Combine like terms: What is the result of $9xy - 2xy + 3z$?

- A. $7xy + 3z$
- B. $5xy + 3z$
- C. $11xy + 3z$
- D. $3z$

10. Combine like terms: $8m - 3m + 4n - 2n$.

- A. $5m - 2n$
- B. $2m + 2n$
- C. $5m + 2n$
- D. $10m + 2n$

Answers

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1. A
2. A
3. B
4. A
5. C
6. C
7. B
8. B
9. A
10. C

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Explanations

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1. What is the simplified form of the expression $4x + 6 - 2x$?

A. $2x + 6$

B. $6x + 6$

C. $4x + 2$

D. $2x + 4$

To simplify the expression $4x + 6 - 2x$, we begin by combining like terms. Like terms are terms that contain the same variable raised to the same power. In this case, the like terms are the terms that include 'x': $4x$ and $-2x$. First, we perform the subtraction on the like terms: $4x - 2x = 2x$. Next, we look at the constant part of the expression, which is $+6$. Since there are no other constant terms to combine, we simply keep $+6$ as it is. Finally, putting it all together, we have: $2x + 6$. This correctly combines the like terms and gives us the simplified form of the original expression. Thus, the simplified form of $4x + 6 - 2x$ is indeed $2x + 6$.

2. Simplify the expression: $5(2x + 3) - 3x$.

A. $7x + 15$

B. $10x + 15$

C. $5x + 15$

D. $5x + 12$

To simplify the expression $5(2x + 3) - 3x$, start by distributing the 5 into the parentheses: $5(2x) + 5(3)$ results in $10x + 15$. Now, rewrite the expression with this result: $10x + 15 - 3x$. Next, combine like terms. The like terms here are $10x$ and $-3x$. Subtracting $3x$ from $10x$ gives you: $10x - 3x = 7x$. Now, bring down the constant term 15: $7x + 15$. Therefore, the final simplified expression is $7x + 15$, which is why this choice is correct.

3. True or False: Combining like terms can only be done with positive coefficients.

A. True

B. False

C. Only for integers

D. Only for real numbers

Combining like terms refers to the process of simplifying algebraic expressions by adding or subtracting coefficients of the same variable. It is essential to understand that this process is not limited to terms with positive coefficients. When we combine like terms, we can work with any coefficients, whether they are positive, negative, or even zero. For example, if we have the expression $(3x - 5x)$, both $(3x)$ and $(-5x)$ are like terms because they share the same variable (x) . When combined, they result in $(-2x)$. This demonstrates that coefficients do not have to be solely positive for combining like terms to occur. This principle applies to various types of numbers, including integers, fractions, and real numbers, illustrating that the ability to combine like terms is a broader concept that encompasses all coefficients, not just those that are positive. Therefore, stating that combining like terms can only be done with positive coefficients is inaccurate, leading to the conclusion that the statement is false.

4. What is the coefficient in the term $7xy$?

- A. 7
- B. x
- C. y
- D. xy

A coefficient is a numerical factor that multiplies a variable or a product of variables in a term. In the term $7xy$, the number 7 is the factor that is multiplying the variables x and y together. To understand why 7 is identified as the coefficient, we can rearrange the term to emphasize its structure: $7xy$ can be thought of as 7 times (x times y). The 7 is what scales the value of the product of the variables x and y . Other elements in the term serve different roles. The variables x and y represent the unknown quantities being multiplied, but they do not qualify as coefficients themselves. Therefore, 7 is correctly identified as the coefficient in the term.

5. What is the result of simplifying the expression $9m - 3m + 5n - 2n$?

- A. $9m + 3n$
- B. $3m + 2n$
- C. $6m + 3n$
- D. $6m - 3n$

To find the result of simplifying the expression $(9m - 3m + 5n - 2n)$, we will combine like terms. Like terms are terms that contain the same variable raised to the same power. First, let's group the (m) terms together and the (n) terms together: - For the (m) terms: $(9m - 3m)$ - For the (n) terms: $(5n - 2n)$ Now, we simplify each group: 1. **Simplifying the (m) terms:** $[9m - 3m = (9 - 3)m = 6m]$ 2. **Simplifying the (n) terms:** $[5n - 2n = (5 - 2)n = 3n]$ Finally, we combine the simplified (m) and (n) terms: $[6m + 3n]$ Thus, the final simplified expression is $(6m + 3n)$, which corresponds with the choice indicated. This makes the option valid and confirms the correct simplification process

6. What is the result of combining the terms: $2a^2 + 3a^2 - a^2$?

- A. $6a^2$
- B. $5a^2$
- C. $4a^2$
- D. $3a^2$

To find the result of combining the terms $(2a^2 + 3a^2 - a^2)$, we start by identifying the like terms involved. All the terms, $(2a^2)$, $(3a^2)$, and $(-a^2)$, are multiples of (a^2) . 1. First, add the coefficients of the positive terms: $(2 + 3 = 5)$. 2. Now, include the negative coefficient from $(-a^2)$, which is effectively subtracting 1: $(5 - 1 = 4)$. Thus, when you combine these like terms, you effectively have $(4a^2)$. This means the correct result of the expression $(2a^2 + 3a^2 - a^2)$ is indeed $(4a^2)$. The other options do not accurately represent the sum of these terms, as they do not correctly account for the coefficients during combination.

7. If $x = 2$, what is the result of simplifying $4x + x - 3$?

- A. 5
- B. 7**
- C. 8
- D. 15

To simplify the expression $(4x + x - 3)$, you first combine the like terms. The terms $(4x)$ and (x) are both multiples of (x) , so you can add them together: $[4x + x = 5x]$ This simplifies the expression to: $[5x - 3]$ Next, you substitute the value of (x) with 2, since the question states that $(x = 2)$: $[5(2) - 3]$ Calculate $(5(2))$: $[10 - 3]$ Finally, perform the subtraction: $[10 - 3 = 7]$ Therefore, the final result after simplifying and substituting is 7. This means the correct answer is indeed 7, confirming that combining like terms and substituting the value appropriately leads to the correct outcome.

8. Combine like terms from the expression: $x - 2 - x + 3$.

- A. 5
- B. 1**
- C. -2
- D. 3

To simplify the expression $(x - 2 - x + 3)$, it is important to identify and combine the like terms. The terms in the expression can be grouped as follows: 1. The (x) terms: (x) and $(-x)$. 2. The constant terms: (-2) and $(+3)$. First, when you combine the (x) terms: $-(x - x)$ results in (0) . Next, you combine the constant terms: $-(-2 + 3)$ gives (1) . When you put these results together, the expression simplifies to $(0 + 1)$, which is simply (1) . This shows that the correct answer is (1) , as obtained by combining the like terms in the given expression effectively.

9. Combine like terms: What is the result of $9xy - 2xy + 3z$?

- A. $7xy + 3z$**
- B. $5xy + 3z$
- C. $11xy + 3z$
- D. $3z$

To combine like terms effectively, it's important to identify which terms can be added or subtracted. In this case, the terms " $9xy$ " and " $-2xy$ " are like terms because they both contain the variable " xy ." To combine them, you perform the operation: $9xy - 2xy = (9 - 2)xy = 7xy$. The term " $3z$ " is not like terms with " xy " because it involves a different variable (" z "), so it remains unchanged in the expression. Now, we can combine the results. After adding the like terms, you have: $7xy + 3z$. This matches the first option, proving that the correct result of combining the like terms is $7xy + 3z$. This approach clearly emphasizes the understanding that only terms with the same variable components can be combined, which is foundational in algebraic simplification.

10. Combine like terms: $8m - 3m + 4n - 2n$.

- A. $5m - 2n$
- B. $2m + 2n$
- C. $5m + 2n$**
- D. $10m + 2n$

To combine like terms in the expression $8m - 3m + 4n - 2n$, start by identifying which terms can be combined. Like terms are terms that contain the same variable raised to the same power. 1. For the terms with 'm': - You have $8m$ and $-3m$. When you combine these, you subtract 3 from 8: $8m - 3m = 5m$. 2. Next, look at the terms with 'n': - You have $4n$ and $-2n$. Similarly, you combine these by subtracting 2 from 4: $4n - 2n = 2n$. Now, you can put the combined terms together. You have $5m$ from combining the 'm' terms and $2n$ from combining the 'n' terms, resulting in the expression: $5m + 2n$. This expression corresponds to the correct answer, which includes both the coefficient of 'm' and the coefficient of 'n' accurately reflected after the combination process.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://algebraicsimplification.examzify.com>

We wish you the very best on your exam journey. You've got this!

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