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.

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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!

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Questions

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1. What is the simplified form of 8y + 3 - 2y?

A. 6y + 3

B. 10y - 3

C. 7y + 3

D. 8y + 5

2. What is the simplified form of 5m + 2 - 3m?

A. 3m + 2

B. 5m - 2

C. 2m + 2

D. 2m - 2

3. What happens when you combine unlike terms?

A. They are added together

B. They are multiplied

C. They remain separate in the expression

D. They become zero

4. What are the coefficients in the expression 4x + 5y - 3?

A. 4, 5, -3

B. 4, 5

C. -3, 4, 5

D. Only 4 and 5 are coefficients

5. If the expression is 6xy + 2xy - 4xy, what is the final result?

A. 4xy

B. 8xy

C. 0

D. 2xy

6. Is it necessary to rearrange terms when combining like terms?

A. Yes, to ensure accuracy

B. No, rearranging is not necessary

C. Yes, it's required by mathematical rules

D. No, it confuses the process

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7. What is the simplest form of 2x^2 + 3x - x^2 + 7?

A. x^2 + 3x + 7

B. 3x^2 + 10

C. x^2 + 10

D. 3x + 7

8. Simplify the expression 5k + 6 - 2k - 1.

A. 3k + 5

B. 3k + 7

C. 2k + 6

D. 5k + 5

9. When combining terms, what is the first step?

A. Group all constants together

B. Identify like terms

C. Multiply all terms

D. Simplify the coefficients directly

10. What is the result of simplifying 5y - 3y + 2y?

A. 6y

B. 2y

C. 4y

D. 8y

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Answers

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

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Explanations

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1. What is the simplified form of 8y + 3 - 2y?

A. 6y + 3

B. 10y - 3

C. 7y + 3

D. 8y + 5

To simplify the expression 8y + 3 - 2y, start by identifying and combining the like terms. The like terms in this case involve the terms that contain the variable \(y\), which are \(8y\) and \(-2y\). 1. Combine the coefficients of the like terms: - You have \(8y\) and \(-2y\). - When you combine these, you perform the calculation \(8 - 2\), which equals \(6\). 2. After combining, you have \(6y\). 3. The constant term in the original expression is \(3\), and since there are no other constant terms to combine it with, it remains the same. 4. Therefore, when you put it all together, you get \(6y + 3\). This process demonstrates how to effectively combine like terms, arriving at the correct simplified form of the expression, which is \(6y + 3\).

2. What is the simplified form of 5m + 2 - 3m?

A. 3m + 2

B. 5m - 2

C. 2m + 2

D. 2m - 2

To find the simplified form of the expression 5m + 2 - 3m, we start by combining like terms. In this expression, we have two terms with the variable 'm': 5m and -3m. We can combine these by subtracting the coefficient of the second term from the coefficient of the first term. So, we calculate: 5m - 3m = 2m. Next, we still have the constant term 2 in the expression. After combining the like terms, we can write the simplified expression as: 2m + 2. This matches choice C. Thus, the correct answer accurately reflects the combined like terms, resulting in a correctly simplified expression.

3. What happens when you combine unlike terms?

A. They are added together

B. They are multiplied

C. They remain separate in the expression

D. They become zero

When you combine unlike terms, they do not merge together, and instead, they remain separate in the expression. Unlike terms are those that have different variable parts or different exponents, which means they cannot be combined into a single term through addition or subtraction. For instance, in the expression 3x + 5y, the terms 3x and 5y are unlike terms because they involve different variables (x and y). Hence, they remain distinct in the expression rather than being simplified or added together. This concept is fundamental to algebra because it emphasizes the importance of identifying which terms can be combined and which cannot. Unlike terms maintain their individuality and are expressed separately, which is crucial for accurately representing mathematical relationships.

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4. What are the coefficients in the expression 4x + 5y - 3?

A. 4, 5, -3

B. 4, 5

C. -3, 4, 5

D. Only 4 and 5 are coefficients

In the expression 4x + 5y - 3, coefficients refer specifically to the numerical factors that multiply the variables in the expression. The term "4x" has a coefficient of 4, which is the number multiplying the variable x. Similarly, the term "5y" has a coefficient of 5, which is the number multiplying the variable y. The third term, -3, is actually a constant and does not represent a coefficient of a variable. Therefore, it is correct to identify the coefficients in this expression as 4 and 5. Since the correct choice lists all the numerical factors associated with the variables, which are 4 and 5, it correctly identifies the coefficients, with the constant -3 not being included as a coefficient of any variable.

5. If the expression is 6xy + 2xy - 4xy, what is the final result?

A. 4xy

B. 8xy

C. 0

D. 2xy

To simplify the expression \(6xy + 2xy - 4xy\), we start by identifying and combining like terms. Like terms are terms that contain the same variable components. In this case, all the terms \(6xy\), \(2xy\), and \(-4xy\) contain the term \(xy\). We first combine the coefficients of the like terms: 1. Start with the first term: \(6xy\). 2. Add the second term: \(2xy\). This gives \(6xy + 2xy = 8xy\). 3. Now subtract the third term: \(-4xy\). So, \(8xy - 4xy = 4xy\). The final result after combining these terms is \(4xy\). This clearly shows that we added and subtracted the coefficients correctly within the same variable framework. Therefore, the correct answer reflects the sum of the coefficients applied to the common variable term \(xy\).

6. Is it necessary to rearrange terms when combining like terms?

A. Yes, to ensure accuracy

B. No, rearranging is not necessary

C. Yes, it's required by mathematical rules

D. No, it confuses the process

When combining like terms, it is not necessary to rearrange the terms. Like terms are those that have the same variable raised to the same power, and they can simply be added or subtracted regardless of their order in the equation. The process works because addition is commutative, meaning the order in which you add numbers or terms does not affect the result. For example, if you have the expression 3x + 5 + 2x, you can combine the like terms (3x and 2x) without any need to rearrange them. You can directly add them to get (3x + 2x) + 5 = 5x + 5. The same result holds even if you add the constant first, illustrating that rearranging is not essential. This understanding is crucial as it allows for flexibility in simplification and encourages students to focus on identifying and combining like terms without the additional step of rearranging, which could potentially complicate their approach.

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7. What is the simplest form of 2x^2 + 3x - x^2 + 7?

A. x^2 + 3x + 7

B. 3x^2 + 10

C. x^2 + 10

D. 3x + 7

To simplify the expression \(2x^2 + 3x - x^2 + 7\), the goal is to combine like terms appropriately. Firstly, identify the like terms in the expression: 1. The \(x^2\) terms: \(2x^2\) and \(-x^2\). 2. The \(x\) term: \(3x\). 3. The constant term: \(7\). Now, combine the \(x^2\) terms: \[2x^2 - x^2 = (2 - 1)x^2 = 1x^2 = x^2 \] Next, bring down the \(x\) term and the constant: \[3x + 7 \] Putting it all together, you have: \[x^2 + 3x + 7 \] This is the simplest form of the original expression. Hence, this choice is the correct answer because it accurately reflects the combination of the like terms in the expression. Other choices do not represent this combination correctly. For instance, some options may incorrectly combine or misrepresent the coefficients, such as incorrectly omitting a term or failing to correctly

8. Simplify the expression 5k + 6 - 2k - 1.

A. 3k + 5

B. 3k + 7

C. 2k + 6

D. 5k + 5

To simplify the expression 5k + 6 - 2k - 1, we begin by identifying and combining like terms. First, focus on the terms that contain the variable \(k \). These terms are 5k and -2k. When we combine them, we perform the following calculation: 5k - 2k = 3k. Next, we look at the constant terms, which are 6 and -1. Combining these constants gives us: 6 - 1 = 5. Now that we have simplified both parts, we can combine our results. From the variable terms, we obtained 3k, and from the constant terms, we determined that it simplifies to 5. Therefore, the complete simplified expression is: 3k + 5. This aligns perfectly with the correct answer you provided, which is 3k + 5. This reflects the proper summation of both like terms in the expression.

9. When combining terms, what is the first step?

A. Group all constants together

B. Identify like terms

C. Multiply all terms

D. Simplify the coefficients directly

The first step in combining terms involves identifying like terms. Like terms are those that have the same variable raised to the same power. For example, in the expression \(3x + 5x\) and \(2y - 4y\), \(3x\) and \(5x\) are like terms, as are \(2y\) and \(-4y\). Recognizing these terms allows you to efficiently combine them by adding or subtracting their coefficients. If you were to group all constants together or simplify coefficients directly without first identifying like terms, you might miss opportunities to combine terms that actually belong together, which could lead to incorrect simplifications. Multiplying all terms is unrelated to the process of combining like terms and would not lead to a correct simplification in this context. Thus, beginning with identifying like terms is essential for accurate algebraic simplification.

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10. What is the result of simplifying 5y - 3y + 2y?

A. 6y

B. 2y

C. 4y

D. 8y

To simplify the expression \(5y - 3y + 2y\), we need to combine the coefficients of the like terms, which are all terms involving \(y\). First, start by identifying the coefficients of each term: - The coefficient of the first term, \(5y\), is 5. - The coefficient of the second term, \(-3y\), is -3. - The coefficient of the third term, \(2y\), is 2. Now, combine these coefficients: \[5 + (-3) + 2 \] Perform the addition step-by-step: 1. Start with \(5\). 2. Subtract \(3\) from \(5\): \[5 - 3 = 2 \] 3. Add \(2\) to \(2\): \[2 + 2 = 4 \] Thus, the combined coefficient simplifies to \(4\), so the simplified expression is: \[4y \] This is why the correct answer is \(4y\).

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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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