Algebraic Simplification: Combining Like Terms for Students Practice Test (Sample)

Study Guide

BY EXAMZIFY

Everything you need from our exam experts!

Sample study guide. For the full version with hundreds of questions, visit:
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 result for 8a + 5a - 2a - 3a?

A. 8a

B. 5a

C. 10a

D. 3a

2. What is the result of simplifying 4y + 6 - 2y?

A. 2y + 6

B. 4y + 6

C. 6y + 6

D. 2y - 6

3. Which term could be combined with 6y in the expression 2y + 9 + 6y?

A. 9

B. 2y

C. 6y

D. None of these

4. What is the result of simplifying 3x + 4 - 2x?

A. x + 4

B. 3x + 4

C. 2x + 4

D. x - 4

5. What is the combined result of -x and -3x?

A. -3x

B. -4x

C. 3x

D. -2x

6. What is the result of simplifying 6m + 2 - 4m?

A. 2m + 2

B. 10m + 2

C. 6m - 2

D. 4m + 2

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7. If you have the expression 8x + 3y - 2x + 4y, what is the simplified form?

A. 6x + 7y

B. 10x + 7y

C. 5y

D. 8x + 7y

8. Simplify the expression 6b + 2b - 4.

A. 8b - 4

B. 6b - 4

C. 4b + 4

D. 2b - 4

9. Simplify: 1/2a + 3/4a.

A. 5/4a

B. 3/4a

C. 1/4a

D. 2a

10. What is the result of simplifying the expression 4x + 4y - 4y + 8?

A. 4x + 4

B. 4x + 8

C. 8y + 4x

D. 4y + 8

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Answers

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

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Explanations

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1. What is the simplified result for 8a + 5a - 2a - 3a?

A. 8a

B. 5a

C. 10a

D. 3a

To simplify the expression 8a + 5a - 2a - 3a, we start by identifying and combining the like terms. Like terms are the terms that contain the same variable raised to the same power. In this case, all terms involve the variable 'a'. First, we can add the positive coefficients together: 8a + 5a = 13a Next, we combine the negative coefficients: -2a - 3a = -5a Now we take the sum of the positive part and the negative part: 13a + (-5a) = 13a - 5a = 8a This gives us the final simplified result of 8a. Thus, the correct answer is 8a, which corresponds to the first choice. Understanding how to combine like terms is essential in algebra, as it allows for the simplification of expressions and helps in solving equations. This process is crucial for students to master as they progress in their math education.

2. What is the result of simplifying 4y + 6 - 2y?

A. 2y + 6

B. 4y + 6

C. 6y + 6

D. 2y - 6

To simplify the expression 4y + 6 - 2y, you focus on combining like terms. Like terms are terms that contain the same variable raised to the same power. In this case, you have two like terms, which are 4y and -2y. Start with the terms that contain the variable y: 4y - 2y results in 2y. Now, look at the constant term, which is +6. Since there are no other constant terms to combine with, it remains as is. Putting it all together, you get: 2y (from combining the y terms) + 6 (the constant term). Thus, the simplified expression is 2y + 6. This matches the correct answer. The other options do not reflect the correct combination of the original terms.

3. Which term could be combined with 6y in the expression 2y + 9 + 6y?

A. 9

B. 2y

C. 6y

D. None of these

To understand why 2y is the correct choice for combining with 6y in the expression 2y + 9 + 6y, we first need to identify what "like terms" are. Like terms are those that have the same variable raised to the same power. In this case, both 2y and 6y contain the variable y raised to the first power. When combining like terms, you simply add or subtract the coefficients (the numerical parts) of those terms while keeping the variable part the same. Here, the coefficients are 2 and 6. So, if you combine 2y and 6y, you would add the coefficients: 2 + 6 = 8. Thus, when combined, they form the term 8y. On the other hand, the term 9 does not contain the variable y, making it a constant rather than a term that can be combined with 6y. The same holds true for 6y itself; you do not combine a term with itself in this context, as that leads to duplicating the term rather than simplifying. Therefore, only 2y can be combined with 6y. As a result, combining like terms allows

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4. What is the result of simplifying 3x + 4 - 2x?

A. x + 4

B. 3x + 4

C. 2x + 4

D. x - 4

To simplify the expression $3x + 4 - 2x$, you start by identifying the like terms in the expression. The like terms here are the terms that contain x, which are $3x$ and $-2x$. You can combine these like terms by subtracting $2x$ from $3x$: $$ 3x - 2x = 1x \text{ or simply } x $$ Next, you also have the constant term, which is 4. Since it does not have any like terms to combine it with, it remains unchanged. Putting these results together, you get: $$ x + 4 $$ Thus, the result of simplifying $3x + 4 - 2x$ is $x + 4$. This correctly reflects the process of combining like terms and explains why the answer is accurate.

5. What is the combined result of -x and -3x?

A. -3x

B. -4x

C. 3x

D. -2x

To combine -x and -3x, we start by identifying that both terms are like terms because they contain the same variable, x. The coefficients of these terms are -1 for -x and -3 for -3x. When combining like terms, we add the coefficients together: $$ -1 + (-3) = -1 - 3 = -4 $$ Thus, we have: $$ -x - 3x = -4x $$ The combined result of -x and -3x is -4x, which matches the correct answer. This shows a clear understanding of how to combine coefficients of like terms in algebraic expressions.

6. What is the result of simplifying 6m + 2 - 4m?

A. 2m + 2

B. 10m + 2

C. 6m - 2

D. 4m + 2

To simplify the expression 6m + 2 - 4m, we begin by identifying the like terms. In this expression, the terms involving 'm' are 6m and -4m. To combine these, we perform the following calculation: $6m - 4m = (6 - 4)m = 2m$. Now, we also have the constant term, which is simply +2, that remains unchanged during simplification. Thus, when we combine the results, we get: $2m + 2$. The final simplified expression is 2m + 2, which corresponds to the correct answer. This process emphasizes the importance of combining like terms correctly in algebraic expressions. Understanding how to identify and manipulate these terms is crucial for successful algebraic simplification.

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7. If you have the expression 8x + 3y - 2x + 4y, what is the simplified form?

A. 6x + 7y

B. 10x + 7y

C. 5y

D. 8x + 7y

To simplify the expression 8x + 3y - 2x + 4y, we focus on combining like terms, which are terms that have the same variable raised to the same power. First, look at the terms that contain 'x'. The expression has 8x and -2x: - Combining these gives you \(8x - 2x = 6x\). Next, examine the terms that contain 'y'. The expression includes 3y and 4y: - Combining these results in \(3y + 4y = 7y\). Putting those results together, we get the simplified expression: 6x + 7y. Therefore, the correct answer reflects both combined like terms accurately, leading to the result of 6x + 7y. This demonstrates understanding of how to simplify algebraic expressions by grouping and combining terms based on their variables.

8. Simplify the expression 6b + 2b - 4.

A. 8b - 4

B. 6b - 4

C. 4b + 4

D. 2b - 4

To simplify the expression 6b + 2b - 4, we start by combining the like terms. The like terms in this expression are 6b and 2b, which both contain the variable b. When we add these together, we get: 6b + 2b = 8b. Next, we still have the constant term (-4) in the expression. To incorporate this, we combine it with our already simplified term: 8b - 4. This results in the final simplified expression of 8b - 4. Therefore, the answer is correct because it accurately represents the combined like terms and retains the constant. This process highlights the importance of combining coefficients of like terms while keeping constants separate, leading you to a clean, simplified expression.

9. Simplify: 1/2a + 3/4a.

A. 5/4a

B. 3/4a

C. 1/4a

D. 2a

To simplify the expression \(\frac{1}{2}a + \frac{3}{4}a \), we first need to find a common denominator for the fractions involved. The denominators here are 2 and 4. The least common denominator is 4. Next, we convert \(\frac{1}{2}a \) into an equivalent fraction with a denominator of 4. To do this, we multiply both the numerator and the denominator by 2: \[\frac{1}{2}a = \frac{1 \times 2}{2 \times 2}a = \frac{2}{4}a \] Now we can rewrite the expression: \[\frac{2}{4}a + \frac{3}{4}a \] Since both terms now have the same denominator, we can combine the numerators: \[\frac{2 + 3}{4}a = \frac{5}{4}a \] Thus, the simplified form of the expression is \(\frac{5}{4}a \). This shows that the selected answer is correct. The effective method used involves finding a common denominator, rewriting the terms

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10. What is the result of simplifying the expression 4x + 4y - 4y + 8?

A. 4x + 4

B. 4x + 8

C. 8y + 4x

D. 4y + 8

To simplify the expression 4x + 4y - 4y + 8, first, identify the like terms that can be combined. In this case, the terms 4y and -4y are like terms; they will cancel each other out when combined. This leaves us with just the terms 4x and 8. Now, let's rewrite the simplified expression. After combining the like terms, we have: 4x + (4y - 4y) + 8 = 4x + 0 + 8 = 4x + 8. Thus, the final simplified expression is 4x + 8, which matches the choice that states this result clearly. This process of identifying and combining like terms is crucial in algebra, as it helps to simplify expressions and solve equations efficiently.

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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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