

ALGEBRA 1 HONORS END-OF-COURSE (EOC) PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	14

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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 does a scatter plot depict?

- A. A graph with points plotted to show a possible relationship between two sets of data
- B. A chart showing the frequency of a single category
- C. A diagram of geometric shapes
- D. A line graph representing trends over time

2. In inequality graphs, what does a solid line or filled circle indicate?

- A. solid line or filled in circle
- B. dashed line or open circle
- C. no line is used
- D. a dotted line with hollow circle

3. If the solution set is all numbers less than 9, which inequality describes it?

- A. $x < 9$
- B. $x > 9$
- C. $x \leq 9$
- D. $x \geq 9$

4. In the vertical motion model $h(t) = -16t^2 + v_0t + h_0$, which symbol represents the initial height?

- A. h_0
- B. v_0
- C. t
- D. h

5. What is the simplified standard form after applying FOIL to $(x+a)(x+b)$?

- A. $x^2 + ax + bx + ab$
- B. $x^2 + (a+b)x + ab$
- C. $x^3 + (a+b)x + ab$
- D. $x^2 + (a+b)x + ab$

6. What does $(f+g)(x)$ denote?

- A. $f(x) - g(x)$
- B. $f(x) + g(x)$
- C. Add the functions $f(x)$ and $g(x)$
- D. $f(g(x))$

7. Shading to the right of 0 with an open circle describes which inequality?

- A. $x > 0$
- B. $x < 0$
- C. $x \geq 0$
- D. $x \leq 0$

8. Which measure of center is best to use for data that is skewed?

- A. Mean
- B. Median
- C. Mode
- D. Range

9. In the elimination method, what is a common technique to eliminate a variable?

- A. Line up terms in both equations and add to cancel a variable
- B. Graph the two equations and pick the intersection
- C. Solve one equation for a variable and substitute into the other
- D. Solve the system by finding a point on a plotted line

10. From the standard form $ax^2 + bx + c$, the x-coordinate of the vertex is $h =$?

- A. $h = b/(2a)$
- B. $h = -2a/b$
- C. $h = -b/(2a)$
- D. $h = 2a/b$

Answers

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

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Explanations

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1. What does a scatter plot depict?

- A. A graph with points plotted to show a possible relationship between two sets of data**
- B. A chart showing the frequency of a single category
- C. A diagram of geometric shapes
- D. A line graph representing trends over time

A scatter plot is used to explore whether two numerical variables might be related. Each point represents a pair of values, one from each variable, plotted on the horizontal and vertical axes. By looking at the pattern of points, you can tell if one variable tends to rise when the other rises (positive relationship), falls (negative relationship), or if there's no clear pattern. It also helps identify outliers and whether the relationship looks linear or curved. This is different from showing how often categories occur (that would be a bar chart or histogram), a diagram of geometric shapes, or a line graph that tracks changes over time.

2. In inequality graphs, what does a solid line or filled circle indicate?

- A. solid line or filled in circle**
- B. dashed line or open circle
- C. no line is used
- D. a dotted line with hollow circle

In inequality graphs, the boundary line shows where the inequality switches from true to false. A solid boundary means the value on the boundary is included in the solution. That's why a solid line or a filled circle indicates inclusion—the inequality uses $\leq$ or $\geq$, so every point on the boundary, and the points on the chosen side, satisfy the inequality. If the boundary were dashed or the circle open, the boundary value wouldn't be included, matching $<$ or $>$ instead.

3. If the solution set is all numbers less than 9, which inequality describes it?

- A. $x < 9$**
- B. $x > 9$
- C. $x \leq 9$
- D. $x \geq 9$

When a solution set includes every number smaller than 9, the inequality describing it is $x < 9$. The " $<$ " symbol means strictly less than, so 9 itself isn't included, but every number to the left of 9 is. For example, 8 or -5 fit, while 9 does not and anything bigger than 9 does not either. The other options either include 9 or numbers greater than 9, which doesn't match the set of numbers smaller than 9.

4. In the vertical motion model $h(t) = -16t^2 + v_0t + h_0$, which symbol represents the initial height?

A. h_0

B. v_0

C. t

D. h

The starting height is the value of height when time is zero. In the model $h(t) = -16t^2 + v_0t + h_0$, the h_0 term is that starting height. If you plug in $t = 0$, you get $h(0) = -16(0)^2 + v_0(0) + h_0 = h_0$, confirming it's the height at the initial moment. The other parts represent how height changes over time: $-16t^2$ comes from gravity, and v_0t adds the contribution from the initial vertical velocity. The symbol for the initial height is h_0 .

5. What is the simplified standard form after applying FOIL to $(x+a)(x+b)$?

A. $x^2 + ax + bx + ab$

B. $x^2 + (a+b)x + ab$

C. $x^3 + (a+b)x + ab$

D. $x^2 + (a+b)x + ab$

FOIL shows how to multiply two binomials and then collect like terms. Multiply $(x+a)(x+b)$: First $x \cdot x = x^2$, Outer $x \cdot b = bx$, Inner $a \cdot x = ax$, Last $a \cdot b = ab$. This gives $x^2 + bx + ax + ab$. The middle terms are like terms and combine to $(a+b)x$, giving the standard form $x^2 + (a+b)x + ab$. This is the correct simplified form because it orders terms by decreasing degree and has like terms combined.

6. What does $(f+g)(x)$ denote?

A. $f(x) - g(x)$

B. $f(x) + g(x)$

C. Add the functions $f(x)$ and $g(x)$

D. $f(g(x))$

Adding two functions creates a new function by summing their outputs for each input. So $(f+g)(x)$ means you take the value f gives at x and add the value g gives at x , giving $(f+g)(x) = f(x) + g(x)$. This is not subtraction or composition; it's simply combining the two outputs. Therefore, the description that matches is to add the functions $f(x)$ and $g(x)$.

7. Shading to the right of 0 with an open circle describes which inequality?

A. $x > 0$

B. $x < 0$

C. $x \geq 0$

D. $x \leq 0$

Open circle at the point 0 shows that 0 itself is not included. Shading to the right of that point means every number greater than 0 is included. Put together, this describes $x > 0$. If the shading were to the left, it would be $x < 0$; if the endpoint were included, the symbols would be $\geq$ or $\leq$ depending on the side shaded.

8. Which measure of center is best to use for data that is skewed?

- A. Mean
- B. Median**
- C. Mode
- D. Range

When data are skewed, you want a center that isn't pulled toward the tail by extreme values. The median fits that need because it's the middle value when the data are ordered, so outliers or a long tail don't shift it much. The mean, by contrast, uses all values, so a single large or small value can pull it toward the tail and give a distorted sense of a typical value. The mode is simply the most frequent value and may not reflect the overall distribution, and the range is about spread, not center. For example, with data 1, 2, 2, 2, 3, 100, the median is 2, while the mean is about 18.3, showing how the extreme high value pulls the mean upward. Therefore, the median is the best measure of center for skewed data.

9. In the elimination method, what is a common technique to eliminate a variable?

- A. Line up terms in both equations and add to cancel a variable**
- B. Graph the two equations and pick the intersection
- C. Solve one equation for a variable and substitute into the other
- D. Solve the system by finding a point on a plotted line

Eliminating a variable by adding the equations until one variable disappears is the idea here. You rewrite the system in standard form and align like terms so that the coefficients of one variable sum to zero. Then you add (or subtract) the equations to cancel that variable, leaving you with an equation in a single variable. After solving for that variable, you substitute back into one of the original equations to find the other variable. You can also multiply one equation by a number to make the cancellation possible. For example, with $2x + 3y = 6$ and $4x - y = 5$, you can multiply the second equation by 3 to get $12x - 3y = 15$, then add to the first to cancel y and obtain $14x = 21$, so $x = 3/2$, and then $y = 1$. This method is especially efficient when you can create cancellation with minimal steps, which is why it's a preferred approach for solving systems.

10. From the standard form $ax^2 + bx + c$, the x-coordinate of the vertex is $h =$?

- A. $h = b/(2a)$
- B. $h = -2a/b$
- C. $h = -b/(2a)$**
- D. $h = 2a/b$

The vertex's x-coordinate comes from the axis of symmetry of the parabola $y = ax^2 + bx + c$. If you rewrite the quadratic in vertex form $y = a(x - h)^2 + k$, expanding gives $ax^2 - 2ahx + (ah^2 + k)$. Matching the coefficient of x with bx shows $b = -2ah$, so $h = -b/(2a)$. Another quick way is to use calculus: take the derivative $dy/dx = 2ax + b$ and set it to zero to find the x-coordinate of the vertex, which gives $x = -b/(2a)$. Therefore, the x-coordinate of the vertex is $-b/(2a)$.

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://algebra1honorseoc.examzify.com>

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

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