SIFT MATH PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. If you roll a fair six-sided die, what is the probability of rolling a 4?

A. 1/2

B. 1/6

C. 1/4

D. 1/3

2. Simplify the expression: 6x - 3x + 2

A. 2x + 2

B. 3x + 2

C. 9x - 2

D. x + 2

3. A flight plan covers 600 nautical miles in 3 hours. What is the average speed in knots?

A. 200 knots

B. 180 knots

C. 220 knots

D. 240 knots

4. If you increase 60 by 15%, what is the result?

A. 66

B. 70

C. 69

D. 75

5. What is 45% of 320?

A. 134.8

B. 144.0

C. 138.6

D. 140.2

6. What is the area of a rectangle with length 8 and width 5?

A. 40

B. 45

C. 50

D. 55

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7. A $9,600 invoice is split into three payments of 40%, 35%, and the remainder. What is the third payment?

A. $2,880

B. $3,360

C. $4,200

D. $2,400

8. What is the total sum of the interior angles of a triangle?

A. 180 degrees

B. 360 degrees

C. 90 degrees

D. 270 degrees

9. What is the perimeter of a square with side length 9?

A. 36

B. 81

C. 18

D. 27

10. What is the area of a rectangle with length 10 and width 5?

A. 50

B. 55

C. 60

D. 70

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Answers

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

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Explanations

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1. If you roll a fair six-sided die, what is the probability of rolling a 4?

A. 1/2

B. 1/6

C. 1/4

D. 1/3

To determine the probability of rolling a 4 on a fair six-sided die, we need to consider the total number of possible outcomes and the number of favorable outcomes. A standard six-sided die has six faces, each representing a different number from 1 to 6. When rolling the die, there is one favorable outcome for rolling a 4, as only one face displays the number 4. The probability of any single event occurring is calculated by dividing the number of favorable outcomes by the total number of outcomes. In this case, there is 1 favorable outcome (rolling a 4) and a total of 6 possible outcomes (the numbers 1 through 6). Therefore, the probability is calculated as: Probability = (Number of favorable outcomes) / (Total number of outcomes) = 1/6. This outcome signifies that there is one chance in six to roll a 4, making the probability of rolling a 4 equal to 1/6.

2. Simplify the expression: 6x - 3x + 2

A. 2x + 2

B. 3x + 2

C. 9x - 2

D. x + 2

To simplify the expression $6x - 3x + 2$, you first need to combine the like terms. The terms $6x$ and $-3x$ are both terms involving x. When you combine these terms, you perform the subtraction: $$6x - 3x = 3x$$ So, now the expression can be rewritten as: $$3x + 2$$ This shows that the simplified version of the original expression is $3x + 2$. Therefore, among the options, this matches the correct answer. The other options do not represent the simplified form of the given expression. For instance, $2x + 2$, $9x - 2$, and $x + 2$ have either incorrect coefficients for x or incorrect constant terms, making them not equivalent to the original expression once simplified.

3. A flight plan covers 600 nautical miles in 3 hours. What is the average speed in knots?

A. 200 knots

B. 180 knots

C. 220 knots

D. 240 knots

To determine the average speed in knots, the formula to use is: $$\text{Average Speed (knots)} = \frac{\text{Distance (nautical miles)}}{\text{Time (hours)}}$$ In this scenario, the distance covered is 600 nautical miles, and the time taken is 3 hours. Plugging these values into the formula gives: $$\text{Average Speed} = \frac{600 \text{ nautical miles}}{3 \text{ hours}} = 200 \text{ knots}$$ Thus, the calculated average speed is 200 knots. This is the correct answer because it accurately reflects the relationship between distance and time in the context of nautical measurements, where one knot equals one nautical mile per hour. This basic formula allows for a straightforward assessment of speed for any given distance and time in navigation and aviation.

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4. If you increase 60 by 15%, what is the result?

A. 66

B. 70

C. 69

D. 75

To determine the result of increasing 60 by 15%, you first need to calculate 15% of 60. Start by converting the percentage into a decimal for easier multiplication. This is done by dividing 15 by 100, which gives you 0.15. Next, multiply 60 by 0.15: 60 × 0.15 = 9. Now, add this result to the original number (60): 60 + 9 = 69. Thus, increasing 60 by 15% results in 69. This aligns with the correct answer. The other options do not reflect the accurate calculation of the percentage increase from the original number.

5. What is 45% of 320?

A. 134.8

B. 144.0

C. 138.6

D. 140.2

To find 45% of 320, you first need to convert the percentage into a decimal. This is done by dividing 45 by 100, which gives you 0.45. Next, you multiply this decimal by the number you want to find the percentage of, which in this case is 320. The calculation would look like this: 0.45 × 320 = 144.0 This means that 45% of 320 is indeed 144.0, confirming that this is the correct answer. Calculating percentages in this manner allows you to accurately assess a portion of a given total, which is a fundamental skill in problem-solving and real-world mathematics.

6. What is the area of a rectangle with length 8 and width 5?

A. 40

B. 45

C. 50

D. 55

To find the area of a rectangle, the formula used is the product of its length and width. In this case, the rectangle has a length of 8 and a width of 5. By multiplying these two dimensions together: Area = Length × Width = 8 × 5 = 40. This calculation shows that the area of the rectangle is indeed 40 square units. Understanding this formula is key for solving any problem related to the area of rectangles, as it directly correlates the size of the shape to its dimensions.

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7. A $9,600 invoice is split into three payments of 40%, 35%, and the remainder. What is the third payment?

A. $2,880

B. $3,360

C. $4,200

D. $2,400

To find the third payment, you first need to calculate the amounts of the first two payments based on the percentages provided. The first payment is 40% of the total invoice amount, which can be calculated as: \[0.40 \times 9,600 = 3,840. \] The second payment is 35% of the total invoice amount, calculated as: \[0.35 \times 9,600 = 3,360. \] Now, you can find the total of the first two payments: \[3,840 + 3,360 = 7,200. \] To find the remainder, which is the third payment, subtract the total of the first two payments from the total invoice amount: \[9,600 - 7,200 = 2,400. \] Thus, the third payment is $2,400, making it the correct choice. This approach effectively breaks down the payment structure and ensures that all parts add up to the total invoice amount, providing clarity on how the percentages relate to the final amounts.

8. What is the total sum of the interior angles of a triangle?

A. 180 degrees

B. 360 degrees

C. 90 degrees

D. 270 degrees

The total sum of the interior angles of a triangle is 180 degrees. This fundamental property of triangles can be understood through various geometric principles. One common way to visualize this is to draw a triangle and project lines from each vertex to a point inside the triangle. This can create three smaller triangles, and by applying the fact that the sum of the angles of a straight line is 180 degrees, it's clear that the angles around the interior point must also add up to 180 degrees collectively. This property holds true for all types of triangles, whether they are scalene, isosceles, or equilateral. Understanding that each triangle will always total 180 degrees is a key concept in geometry and serves as a foundation for many other geometric theorems and principles, including those involving polygons and trigonometry. The other provided options are sums that correspond to other shapes or contexts but do not apply to triangles specifically. For example, the sum of the interior angles of a quadrilateral is 360 degrees, which reflects a different geometric figure. Thus, the correct sum for a triangle being 180 degrees is a widely accepted and essential fact in mathematical studies.

9. What is the perimeter of a square with side length 9?

A. 36

B. 81

C. 18

D. 27

To find the perimeter of a square, you use the formula \(P = 4s \), where \(P \) is the perimeter and \(s \) is the length of one side of the square. In this case, the side length is given as 9. By substituting the value into the formula, you perform the calculation as follows: \(P = 4 \times 9 \) This simplifies to: \(P = 36 \) Thus, the perimeter of the square with a side length of 9 is indeed 36. This makes the correct answer consistent with the formula for determining the perimeter of a square, confirming its validity within the context of the geometry involved.

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10. What is the area of a rectangle with length 10 and width 5?

A. 50

B. 55

C. 60

D. 70

To find the area of a rectangle, you use the formula: Area = Length × Width. In this scenario, the length of the rectangle is 10 and the width is 5. Plugging these values into the formula gives: Area = 10 × 5 = 50. Therefore, the area of the rectangle is indeed 50 square units. This calculation confirms the correctness of the choice provided. The other options do not align with the calculated area, highlighting that they are not based on the correct application of the formula for the area of a rectangle.

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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://siftmath.examzify.com

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

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