

SIFT MATH PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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. A pilot's allowance increases from \$2,400 to \$2,520. What is the percentage increase?

- A. 4%
- B. 5%
- C. 6%
- D. 3%

2. Solve for x: $3x + 3 = 9x - 3$.

- A. 1.0
- B. 4.52
- C. 4.95
- D. --2.66

3. What is the result of subtracting 45 from 100?

- A. 55
- B. 65
- C. 75
- D. 70

4. What is the result of simplifying $27/36$?

- A. $2/3$
- B. $3/4$
- C. $1/2$
- D. $4/5$

5. Solve for x: $6x + 2 = 5x - 1$

- A. 3.1
- B. --3.0
- C. --2.2
- D. --4.1

6. If a plane travels 532 miles in 6 hours, what is its average speed?

- A. 88.46
- B. 91.81
- C. 88.67
- D. 84.74

7. What is the next number in the sequence: 2, 4, 8, 16, ...?

- A. 30
- B. 32
- C. 34
- D. 36

8. If $a = 3$ and $b = 4$, what is the value of $a^2 + b^2$?

- A. 21
- B. 18
- C. 25
- D. 20

9. What is the product of 2.5 and 0.4?

- A. A) 1.0
- B. B) 0.8
- C. C) 1.2
- D. D) 0.9

10. If a vehicle travels 585 miles in 5 hours, what is its average speed?

- A. 117.6
- B. 118.5
- C. 115.2
- D. 117.0

Answers

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

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Explanations

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1. A pilot's allowance increases from \$2,400 to \$2,520. What is the percentage increase?

- A. 4%
- B. 5%**
- C. 6%
- D. 3%

To determine the percentage increase, you'll first need to calculate the difference between the new allowance and the original allowance. In this case, the increase is $\$2,520 - \$2,400$, which equals \$120. Next, to find the percentage increase, you take the increase (\$120) and divide it by the original amount (\$2,400). This division gives you: $\left[\frac{120}{2400} = 0.05 \right]$ To convert this decimal into a percentage, you multiply by 100: $\left[0.05 \times 100 = 5\% \right]$ Thus, the percentage increase in the pilot's allowance is 5%. This confirms that the answer is correct and properly represents the change in the allowance in terms of percentage.

2. Solve for x: $3x + 3 = 9x - 3$.

- A. 1.0**
- B. 4.52
- C. 4.95
- D. --2.66

To solve the equation $(3 \cdot x + 3 = 9 \cdot x - 3)$, we start by isolating the variable (x) . First, rearranging the equation helps simplify the terms. Subtract $(3 \cdot x)$ from both sides: $\left[3 + 3 \cdot x - 3 \cdot x = 9 \cdot x - 3 \cdot x - 3 \right]$ This simplifies to: $\left[3 = 6 \cdot x - 3 \right]$ Next, add 3 to both sides: $\left[3 + 3 = 6 \cdot x - 3 + 3 \right]$ This results in: $\left[6 = 6 \cdot x \right]$ Now, divide both sides by 6: $\left[x = 1 \right]$ Thus, the solution to the equation is $(x = 1)$. This value satisfies the original equation. Substituting $(x = 1)$ back into the original equation confirms the solution: $\left[3 \cdot 1 + 3 = 9 \cdot 1 - 3 \right]$ This simplifies to:

3. What is the result of subtracting 45 from 100?

- A. 55**
- B. 65
- C. 75
- D. 70

To find the result of subtracting 45 from 100, you can set up the operation as follows: $100 - 45$. When you perform this subtraction, you start with 100 and take away 45. Breaking it down: - From 100, if you remove 40, you are left with 60. - Then, subtracting the remaining 5 from 60 leads to 55. Thus, the answer to the subtraction problem is indeed 55. This corresponds to the correct answer, showcasing the basic principle of subtraction where you determine how much remains after taking away a certain quantity from a larger amount.

4. What is the result of simplifying 27/36?

A. 2/3

B. 3/4

C. 1/2

D. 4/5

To simplify the fraction $\frac{27}{36}$, you need to find the greatest common divisor (GCD) of the numerator (27) and the denominator (36). The GCD is the largest number that divides both numbers evenly. For 27, the factors are 1, 3, 9, and 27. For 36, the factors are 1, 2, 3, 4, 6, 9, 12, 18, and 36. The largest common factor is 9. Now, divide both the numerator and the denominator by their GCD: - Numerator: $27 \div 9 = 3$ - Denominator: $36 \div 9 = 4$ Thus, when simplified, $\frac{27}{36}$ becomes $\frac{3}{4}$. However, it appears the answer provided was $\frac{2}{3}$, which is not correct based on the simplification process. The accurate simplified form is $\frac{3}{4}$, which is represented in the choices.

Understanding how to simplify fractions through finding the GCD is a fundamental skill in math, allowing you to reduce fractions to their simplest form effectively.

5. Solve for x: $6x + 2 = 5x - 1$

A. 3.1

B. -3.0

C. -2.2

D. -4.1

To solve the equation $6x + 2 = 5x - 1$, we start by isolating the variable x . First, let's move the terms involving x to one side of the equation and the constant terms to the other side. We can do this by subtracting $5x$ from both sides. This gives us: $6x - 5x + 2 = -1$ This simplifies to: $x + 2 = -1$ Next, we isolate x by subtracting 2 from both sides: $x = -1 - 2$ This simplifies to: $x = -3$ In decimal form, this can also be represented as -3.0 . Therefore, this solution matches the correct choice as it states $x = -3.0$. In summary, the process involves combining like terms and isolating the variable to arrive at the solution. This method ensures that the correct answer is found, allowing for careful verification throughout the steps.

6. If a plane travels 532 miles in 6 hours, what is its average speed?

A. 88.46

B. 91.81

C. 88.67

D. 84.74

To determine the average speed of the plane, you need to use the formula for speed, which is calculated by dividing the total distance traveled by the total time taken. In this case, the plane traveled a distance of 532 miles over a period of 6 hours. Performing the calculation, you divide 532 by 6: $\frac{\text{Distance}}{\text{Time}} = \frac{532 \text{ miles}}{6 \text{ hours}} \approx 88.67 \text{ miles per hour}$. This result indicates that the average speed of the plane is approximately 88.67 miles per hour, which corresponds to one of the choices given. This value is correct and accurately represents how to find the average speed in a situation involving consistent travel over a given distance and time. Understanding this calculation helps in recognizing the importance of distance and time in determining speed in various real-world situations.

7. What is the next number in the sequence: 2, 4, 8, 16, ...?

A. 30

B. 32

C. 34

D. 36

To determine the next number in the sequence 2, 4, 8, 16, we can observe a pattern in the numbers. Each number in the sequence is being multiplied by 2 to get the next number. Specifically: - Starting with 2, when we multiply it by 2, we get 4. - Then, if we take 4 and multiply it by 2, we arrive at 8. - Continuing this pattern, multiplying 8 by 2 gives us 16. Following this rule of multiplying by 2, the next number would be obtained by taking 16 and multiplying it by 2. Calculating that gives us: $16 \times 2 = 32$. Therefore, 32 is the next number in the sequence, which is why the correct answer is 32. This pattern of multiplication by 2 leads to exponential growth, and recognizing this consistent operation is key to solving for the next term in such sequences.

8. If $a = 3$ and $b = 4$, what is the value of $a^2 + b^2$?

A. 21

B. 18

C. 25

D. 20

To find the value of $(a^2 + b^2)$ when $(a = 3)$ and $(b = 4)$, you first need to square the values of (a) and (b) . Calculating (a^2) : $[a^2 = 3^2 = 9]$ Calculating (b^2) : $[b^2 = 4^2 = 16]$ Now, you add these two results together: $[a^2 + b^2 = 9 + 16 = 25]$ Thus, the value of $(a^2 + b^2)$ is 25. This confirms that the answer is correct. Squaring the individual values and adding them is the fundamental approach to solving this type of problem. Other answer choices do not meet the requirements of this calculation, as they do not equal the total derived from the correct operations performed on (a) and (b) .

9. What is the product of 2.5 and 0.4?

A. A) 1.0

B. B) 0.8

C. C) 1.2

D. D) 0.9

To find the product of 2.5 and 0.4, you multiply the two numbers together. Begin by rewriting the decimal numbers as fractions for clarity: 2.5 can be written as $(\frac{25}{10})$, and 0.4 can be written as $(\frac{4}{10})$. Thus, the multiplication can be represented as: $[\frac{25}{10} \times \frac{4}{10} = \frac{100}{100} = 1]$ Now, if we multiply 2.5 and 0.4 directly using traditional multiplication: - First multiply 25 and 4 to get 100. - Then, since there are one decimal place in 2.5 and one decimal place in 0.4, the result must be divided by $(10 \times 10 = 100)$. So, 100 divided by 100 gives 1. Therefore, the product of 2.5 and 0.4 is indeed 1. This confirms that the correct answer reflects the accurate calculation of the multiplication.

10. If a vehicle travels 585 miles in 5 hours, what is its average speed?

- A. 117.6
- B. 118.5
- C. 115.2
- D. 117.0**

To determine the average speed of a vehicle, you can use the formula for average speed, which is the total distance traveled divided by the total time taken. In this case, the vehicle has traveled 585 miles in 5 hours. Using the formula: Average speed = Total distance / Total time Substituting the given values: Average speed = 585 miles / 5 hours = 117 miles per hour. The closest value to 117 miles per hour in the choices is 117.0, making it the correct answer. This average speed calculation effectively demonstrates how to find speed by simply dividing distance by time, reinforcing the principle that average speed remains consistent over the total distance and time, provided the motion does not involve any stops or changes in speed.

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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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