

HSPT Math Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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	16

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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. If the sum of three consecutive integers is 72, what is the smallest integer?**
 - A. 21
 - B. 22
 - C. 23
 - D. 24

- 2. How many faces does a cube have?**
 - A. 4
 - B. 5
 - C. 6
 - D. 7

- 3. What is the reciprocal of a number?**
 - A. The same number
 - B. A number that makes the product equal to zero
 - C. A number that, when multiplied with the original number, results in one
 - D. A number that cannot be expressed as a fraction

- 4. What term describes a raised number that specifies the power of a base?**
 - A. Exponent
 - B. Integer
 - C. Inequality
 - D. Rational Number

- 5. If you roll a die, what is the probability of rolling a number greater than 4?**
 - A. $1/2$
 - B. $1/3$
 - C. $2/3$
 - D. $1/6$

6. What do we call the pair of numbers that gives the location of a point in the coordinate plane?

- A. Ordered Pair**
- B. Coordinate Point**
- C. Numeric Pair**
- D. Location Pair**

7. What is the result of $3(4 + 5) - 6$?

- A. 18**
- B. 21**
- C. 24**
- D. 30**

8. What is the volume of a rectangular prism with a length of 4 cm, width of 3 cm, and height of 2 cm?

- A. 20 cm^3**
- B. 24 cm^3**
- C. 30 cm^3**
- D. 12 cm^3**

9. In a numerical data set, what is the value called that is calculated by dividing the sum of all data items by the number of items?

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

10. Which term describes operations that undo each other?

- A. Inverse Operations**
- B. Complementary Operations**
- C. Similar Operations**
- D. Dependent Operations**

Answers

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

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Explanations

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1. If the sum of three consecutive integers is 72, what is the smallest integer?

- A. 21**
- B. 22**
- C. 23**
- D. 24**

To solve the problem, start by letting the three consecutive integers be represented as $\{n\}$, $\{n + 1\}$, and $\{n + 2\}$. The sum of these integers can be expressed as: $\{n + (n + 1) + (n + 2) = 72\}$. Simplifying this equation, we combine like terms: $\{3n + 3 = 72\}$. Next, to isolate $\{n\}$, subtract 3 from both sides: $\{3n = 69\}$. Then, divide both sides by 3: $\{n = 23\}$. Now, since $\{n\}$ represents the smallest integer in the sequence, the smallest integer of the three consecutive integers is indeed 23. This method shows how knowing the relationship between consecutive integers and their sum can directly lead you to the solution. The approach is systematic and relies on algebraic manipulation to arrive at the answer clearly and accurately.

2. How many faces does a cube have?

- A. 4**
- B. 5**
- C. 6**
- D. 7**

A cube is a three-dimensional geometric shape that is characterized by having six equal square faces. Each face intersects with the others at right angles, and they collectively form the distinctive shape of the cube. To visualize this, consider a standard die that you might use in board games; each of its sides represents one of the six faces of a cube. The defining property of a cube is that all its sides are of equal length and all its internal angles are right angles. In summary, the reason the answer is six is that a cube, by definition, features six faces, making it a fundamental aspect of its structure. This property is essential for understanding more complex geometric concepts and relationships involving three-dimensional shapes.

3. What is the reciprocal of a number?

- A. The same number
- B. A number that makes the product equal to zero
- C. A number that, when multiplied with the original number, results in one**
- D. A number that cannot be expressed as a fraction

The reciprocal of a number is defined as a value that, when multiplied by the original number, yields a product of one. This concept is fundamental in mathematics, especially in operations involving fractions and ratios. For example, the reciprocal of 2 is $1/2$, because 2 multiplied by $1/2$ equals 1. This property is essential for simplifying fractions, solving equations, and performing operations involving division. The other options do not accurately describe the reciprocal: - One option describes the same number, which is not how reciprocals work. The reciprocal must be a different number that facilitates the multiplication to one. - Another option talks about a number that results in zero when multiplied with the original number, which doesn't relate to reciprocals at all. - A final option states that a reciprocal cannot be expressed as a fraction, contradicting the very nature of reciprocals, as they are often represented in fractional form. Understanding that the reciprocal's defining characteristic is the ability to multiply to one is key in grasping more complex mathematical concepts.

4. What term describes a raised number that specifies the power of a base?

- A. Exponent**
- B. Integer
- C. Inequality
- D. Rational Number

The term that describes a raised number that specifies the power of a base is called an exponent. In mathematical expressions, the exponent indicates how many times the base is multiplied by itself. For example, in the expression (2^3) , the number 2 is the base, and the raised number 3 is the exponent, meaning (2) is multiplied by itself (3) times: $(2 \times 2 \times 2 = 8)$. Understanding the concept of exponents is fundamental in various areas of mathematics, including algebra and calculus, as they allow for the simplification of expressions and the representation of large numbers in a compact form. The other terms listed do not pertain to the concept of exponents. An integer refers to whole numbers, an inequality represents a relationship between quantities that are not equal, and a rational number denotes any number that can be expressed as a fraction. Each of these terms has its own definition and application in mathematics, but they do not relate to the operation of raising a number to a power.

5. If you roll a die, what is the probability of rolling a number greater than 4?

- A. $1/2$
- B. $1/3$**
- C. $2/3$
- D. $1/6$

To find the probability of rolling a number greater than 4 on a six-sided die, first consider the possible outcomes when rolling the die. The faces of the die show the numbers 1, 2, 3, 4, 5, and 6. The numbers that are greater than 4 are 5 and 6. This gives us a total of 2 favorable outcomes. Since there are 6 possible outcomes in total when rolling the die, the probability can be calculated using the formula for probability:
$$\text{Probability} = \frac{\text{Number of favorable outcomes}}{\text{Total number of possible outcomes}} = \frac{2}{6} = \frac{1}{3}$$
. Thus, the correct answer is $1/3$, indicating that there is a one in three chance of rolling a number greater than 4 when you roll a die.

6. What do we call the pair of numbers that gives the location of a point in the coordinate plane?

- A. Ordered Pair**
- B. Coordinate Point
- C. Numeric Pair
- D. Location Pair

The term used to describe a pair of numbers that determines the location of a point in the coordinate plane is an ordered pair. An ordered pair is represented in the form (x, y) , where 'x' refers to the horizontal position on the x-axis, and 'y' refers to the vertical position on the y-axis. The order of the numbers is crucial; switching them will result in a different point on the plane. This concept is fundamental in understanding how to plot points and navigate within the Cartesian coordinate system. The other options do not accurately convey this concept. For example, "Coordinate Point" may seem relevant, but it does not specifically emphasize the ordered nature of the pair. "Numeric Pair" lacks the precise terminology specific to coordinates, and "Location Pair" is not a standard term used in mathematics. Thus, using the term "ordered pair" ensures clarity and precision in mathematics and helps in effectively communicating the concept of points in the coordinate plane.

7. What is the result of $3(4 + 5) - 6$?

- A. 18
- B. 21
- C. 24**
- D. 30

To solve the expression $3(4 + 5) - 6$, start by simplifying the expression inside the parentheses first. Calculating $4 + 5$ gives you 9. Replacing the parentheses with the sum provides the updated expression: $3(9) - 6$. Next, multiply 3 by 9, which results in 27. Now, you can replace the multiplication in the expression with this value: $27 - 6$. Finally, perform the subtraction. If you subtract 6 from 27, you end up with 21. Therefore, the correct result of the expression is 21. In the context of the answer choices, 21 is present, confirming it as the correct answer.

8. What is the volume of a rectangular prism with a length of 4 cm, width of 3 cm, and height of 2 cm?

- A. 20 cm^3
- B. 24 cm^3**
- C. 30 cm^3
- D. 12 cm^3

To find the volume of a rectangular prism, you use the formula: Volume = length \times width \times height. For this particular prism, the dimensions provided are as follows: length = 4 cm, width = 3 cm, and height = 2 cm. Using the formula, you would calculate the volume as follows: Volume = $4 \text{ cm} \times 3 \text{ cm} \times 2 \text{ cm}$. First, multiply the length and width: $4 \text{ cm} \times 3 \text{ cm} = 12 \text{ cm}^2$. Next, take that result and multiply it by the height: $12 \text{ cm}^2 \times 2 \text{ cm} = 24 \text{ cm}^3$. Thus, the volume of the rectangular prism is 24 cm^3 , matching the answer choice given as B. This calculation effectively demonstrates how the three dimensions interact to produce the total space the prism occupies.

9. In a numerical data set, what is the value called that is calculated by dividing the sum of all data items by the number of items?

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

The correct answer is the mean, which is a fundamental concept in statistics. The mean is calculated by adding together all the values in a data set and then dividing that sum by the total number of values. This calculation provides a measure of the central tendency of the data, representing an average value. For example, if you have a data set consisting of the numbers 2, 3, 5, and 10, you would add these together to get 20. Since there are four numbers in this data set, you would then divide 20 by 4, resulting in a mean of 5. This process smooths out the variations in the data, providing a single value that is typical or representative of the entire set. In contrast, the mode refers to the value that appears most frequently in a data set, while the median is the middle value when the data set is ordered from least to greatest. The range represents the difference between the highest and lowest values in the data set. Each of these measures serves a different purpose and provides distinct insights into the characteristics of the data. Therefore, the mean is specifically used to convey the average of all the values, making it the correct choice for this question.

10. Which term describes operations that undo each other?

- A. Inverse Operations**
- B. Complementary Operations**
- C. Similar Operations**
- D. Dependent Operations**

The term that describes operations that undo each other is inverse operations. In mathematics, operations such as addition and subtraction are considered inverses of each other, as are multiplication and division. For example, if you add a number and then subtract the same number, you return to your original number; likewise, multiplying a number and then dividing it by the same number also leads you back to where you started. This relationship is crucial in solving equations. When you perform an operation on one side of an equation, you typically use the inverse operation on the other side to maintain balance. Understanding inverse operations helps in various mathematical contexts, including algebra, where solving for an unknown variable often involves applying these properties to isolate the variable. The other options do not accurately define this concept.

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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://hsptmath.examzify.com>

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

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