

HSPT 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. If $x = 3$, what is the value of $2x^2 + 4$?
 - A. 22
 - B. 20
 - C. 18
 - D. 24
2. What is the name of the vertical number line that, along with the x-axis, establishes the coordinate plane?
 - A. Y-Axis
 - B. X-Axis
 - C. Origin
 - D. Quadrant
3. What is $\frac{3}{4} + \frac{1}{4}$?
 - A. 1
 - B. $\frac{1}{2}$
 - C. $\frac{1}{4}$
 - D. 2
4. What term refers to the smallest number that can be evenly divided by all denominators in a problem?
 - A. Common Multiple
 - B. Least Common Factor
 - C. Lowest Common Denominator (LCD)
 - D. Greatest Common Multiple
5. What does the Zero Product Property state?
 - A. The product of any number and one equals that number
 - B. The product of any number and zero equals zero
 - C. The product of two positive numbers is always positive
 - D. The product of two negative numbers is always negative

6. What type of sequence is formed by adding or subtracting the same number to the previous term?
- A. Geometric sequence
 - B. Arithmetic sequence
 - C. Variable expression
 - D. Numerical expression
7. Which term describes a line segment that runs from the center of a circle to a point on the circle?
- A. Diameter
 - B. Radius
 - C. Circumference
 - D. Chord
8. What is the name of a chord that passes through the center of a circle?
- A. Radius
 - B. Diameter
 - C. Chord
 - D. Arc
9. What is a mathematical sentence that indicates a relationship between quantities that are not equivalent?
- A. Proportion
 - B. Equation
 - C. Inequality
 - D. Expression
10. When evaluating the expression $5x + 2$ when $x = 4$, what is the result?
- A. 22
 - B. 20
 - C. 24
 - D. 26

Answers

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

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Explanations

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1. If $x = 3$, what is the value of $2x^2 + 4$?

A. 22

B. 20

C. 18

D. 24

To find the value of the expression $(2x^2 + 4)$ when $(x = 3)$, you first substitute the value of (x) into the expression. Starting with the substitution: $(x = 3)$ Now, you insert this value into the expression: $(2x^2 + 4 = 2(3)^2 + 4)$ Next, calculate $(3)^2$: $(3)^2 = 9$ Now substitute that back into the expression: $(2(9) + 4)$ Multiply (2) by (9) : $(18 + 4)$ Finally, add (18) and (4) : $(18 + 4 = 22)$ Thus, the value of $(2x^2 + 4)$ when $(x = 3)$ is (22) , making the answer consistent with the calculation.

2. What is the name of the vertical number line that, along with the x-axis, establishes the coordinate plane?

A. Y-Axis

B. X-Axis

C. Origin

D. Quadrant

The vertical number line that, together with the horizontal x-axis, creates the coordinate plane is called the y-axis. The y-axis is used to plot the vertical position of points in relation to their horizontal position along the x-axis, allowing you to determine the location of any point in a two-dimensional space. In a standard Cartesian coordinate system, the intersection of the x-axis and the y-axis is known as the origin, which represents the point $(0, 0)$. The x-axis is the horizontal line, while the quadrants are the four sections formed in the coordinate plane by the intersection of these two axes. Understanding the role of the y-axis is fundamental to graphing and analyzing relationships between variables on a coordinate plane.

3. What is $\frac{3}{4} + \frac{1}{4}$?

A. 1

B. $\frac{1}{2}$

C. $\frac{1}{4}$

D. 2

When adding fractions, it is important to have a common denominator. In this case, both fractions, $\frac{3}{4}$ and $\frac{1}{4}$, have the same denominator of 4. To add them, you simply keep the denominator the same and add the numerators together. So, you take the numerators 3 and 1 and add them: $3 + 1 = 4$. This gives you a new fraction of $\frac{4}{4}$. The fraction $\frac{4}{4}$ simplifies to 1, as any number divided by itself equals 1. Therefore, the result of adding $\frac{3}{4}$ and $\frac{1}{4}$ is indeed 1.

4. What term refers to the smallest number that can be evenly divided by all denominators in a problem?

- A. Common Multiple
- B. Least Common Factor
- C. Lowest Common Denominator (LCD)**
- D. Greatest Common Multiple

The term that refers to the smallest number that can be evenly divided by all denominators in a problem is known as the Lowest Common Denominator (LCD). This concept is crucial when adding or subtracting fractions with different denominators, as it allows you to convert the fractions into equivalent forms that share a common denominator. By finding the LCD, you ensure that fractions can be combined accurately. This is especially useful in simplifying calculations and achieving consistent results across various operations involving fractions. In contexts where fractions are involved, the LCD provides a systematic way to approach problems that require the alignment of denominators, ensuring that calculations are performed correctly and efficiently.

5. What does the Zero Product Property state?

- A. The product of any number and one equals that number
- B. The product of any number and zero equals zero**
- C. The product of two positive numbers is always positive
- D. The product of two negative numbers is always negative

The Zero Product Property states that if the product of two numbers is zero, then at least one of the factors must be zero. This means that if you have an equation like $(a \times b = 0)$, you can conclude that either $(a = 0)$, $(b = 0)$, or both. This property is crucial in solving quadratic equations and polynomial equations where factoring occurs. Recognizing the significance of this property helps in setting up and solving equations efficiently. For instance, if you encounter a quadratic equation that can be factored into a product equal to zero, applying the Zero Product Property allows you to find the solutions by determining the values of the variables that make each factor equal to zero.

6. What type of sequence is formed by adding or subtracting the same number to the previous term?

- A. Geometric sequence
- B. Arithmetic sequence**
- C. Variable expression
- D. Numerical expression

The sequence formed by adding or subtracting the same number to the previous term is known as an arithmetic sequence. In an arithmetic sequence, the difference between consecutive terms remains constant, which is referred to as the common difference. For example, if you start with the number 2 and consistently add 3, the resulting sequence would be 2, 5, 8, 11, and so on, demonstrating the consistent addition of 3. In contrast, a geometric sequence involves multiplying or dividing by the same number to produce the next term, which leads to exponential growth or decay rather than a steady incremental change. Variable and numerical expressions are not types of sequences but rather represent forms of mathematical expressions with variables and numbers, respectively. Therefore, the classification of a sequence that operates through addition or subtraction of a constant aligns perfectly with the definition of an arithmetic sequence.

7. Which term describes a line segment that runs from the center of a circle to a point on the circle?

- A. Diameter
- B. Radius**
- C. Circumference
- D. Chord

The term that describes a line segment running from the center of a circle to a point on the circle is known as the radius. The radius is a crucial concept in circle geometry, as it not only helps define the size of the circle but also plays a significant role in formulas related to the area and circumference of the circle. When you consider a circle, the radius is constant for any given circle, indicating the distance from the center to any point along its perimeter. This feature is essential for understanding other properties of the circle, such as calculating area (using the formula $A = \pi r^2$) and circumference (using the formula $C = 2\pi r$). In contrast, the diameter refers to a line segment that passes through the center of the circle and connects two points on the circle's edge, making it twice the length of the radius. The circumference is the total distance around the circle, and a chord is any line segment whose endpoints lie on the circle but does not necessarily pass through the center. Understanding these distinctions is vital for grasping the geometric properties of circles.

8. What is the name of a chord that passes through the center of a circle?

- A. Radius
- B. Diameter**
- C. Chord
- D. Arc

A chord that passes through the center of a circle is specifically called a diameter. The diameter is the longest possible chord in a circle, spanning from one side of the circle to the other and intersecting at the center. This property defines the diameter, making it a crucial concept in geometry related to circles. A radius, while related to circles, is the line segment that connects the center of the circle to any point on its circumference, and it is not a chord since it does not connect two points on the circle directly across from each other. A chord is a line segment that connects two points on the circumference of the circle, but it does not necessarily pass through the center. An arc is a portion of the circumference of the circle and does not refer to a line segment at all. Thus, the term 'diameter' accurately identifies the chord that meets the specified criteria in the question.

9. What is a mathematical sentence that indicates a relationship between quantities that are not equivalent?

- A. Proportion
- B. Equation
- C. Inequality**
- D. Expression

A mathematical sentence that indicates a relationship between quantities that are not equivalent is an inequality. Inequalities express the idea that one quantity is either less than, greater than, less than or equal to, or greater than or equal to another quantity. For example, the statement $x < 5$ reveals that x is not equivalent to 5, as it is less than 5. This fundamental notion of non-equivalence is what sets inequalities apart from equations, where both sides of the statement are equal. In contrast, proportions and equations deal with relationships of equivalence, where proportions set two ratios equal to each other, and equations indicate that two expressions have the same value. An expression, on the other hand, does not show a relationship between two quantities at all but instead represents a value or quantity. Therefore, the correct answer that describes a relationship indicating quantities that are not equivalent is indeed an inequality.

10. When evaluating the expression $5x + 2$ when $x = 4$, what is the result?

A. 22

B. 20

C. 24

D. 26

*To find the value of the expression $5x + 2$ when $x = 4$, you simply substitute 4 for x in the expression. Start with the expression: $5x + 2$ Substituting $x = 4$ gives: $5(4) + 2$ Now, perform the multiplication: $5 * 4 = 20$ Next, add 2 to this result: $20 + 2 = 22$ Thus, when evaluating the expression $5x + 2$ with $x = 4$, you arrive at a final result of 22. This confirms that the answer is correct.*

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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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