HESI Math Practice Exam (Sample)

Study Guide

BY EXAMZIFY

Everything you need from our exam experts!

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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

1. What is the median of the following numbers: 3, 8, 7, 5, 9?

    A. 5

    B. 8

    C. 7

    D. 6

2. What defines a 'proportion' in mathematics?

    A. Two different numbers

    B. Two ratios that have equal values

    C. A single fraction

    D. A ratio expressed as a percentage

3. A recipe requires 2/3 cup of sugar. If you want to make half the recipe, how much sugar do you need?

    A. 1/4 cup

    B. 1/3 cup

    C. 2/3 cup

    D. 1 cup

4. What is the value of x in the equation 4x + 2 = 18?

    A. x = 2

    B. x = 3

    C. x = 4

    D. x = 5

5. How is a variable commonly represented?

    A. As a number

    B. As a symbol

    C. As an equation

    D. As a constant

6. What is 15.5% of 600?

    A. 80

    B. 93

    C. 100

    D. 110

7. **What is the equivalent expression for writing "5.7" in words?**

    A. Five and seven

    B. Five point seven

    C. Five and seven tenths

    D. Five plus seven tenths

8. **How many meters are in one kilometer?**

    A. 100 meters

    B. 500 meters

    C. 1,000 meters

    D. 2,000 meters

9. **The number 65 is 25% of what number?**

    A. 130

    B. 260

    C. 315

    D. 400

10. **How many fluid ounces are equivalent to 1 pint?**

    A. 8 fluid ounces

    B. 12 fluid ounces

    C. 16 fluid ounces

    D. 20 fluid ounces

Answers

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

Explanations

1. What is the median of the following numbers: 3, 8, 7, 5, 9?

A. 5

B. 8

C. 7

D. 6

To find the median, first, the numbers must be arranged in ascending order. For the numbers given—3, 8, 7, 5, and 9—the ordered sequence is 3, 5, 7, 8, 9. Once the numbers are sorted, the median can be determined. The median is the middle value in a list of numbers. Since there are five numbers in this case, the median is the third number in the ordered list. Counting to the middle of the sorted numbers: 1. The first number is 3. 2. The second number is 5. 3. The third and middle number is 7. Therefore, the median of the numbers 3, 8, 7, 5, and 9 is 7. This understanding helps solidify the concept of finding the median by recognizing the importance of sorting the data first and identifying the central value within the ordered set.

2. What defines a 'proportion' in mathematics?

A. Two different numbers

B. Two ratios that have equal values

C. A single fraction

D. A ratio expressed as a percentage

A proportion in mathematics is defined as two ratios that have equal values. This means that the comparison between the two ratios results in the same relationship or fraction. For example, if you have the ratio of 1:2 and you find another ratio, like 2:4, both of these ratios simplify to the same value (1/2), thereby forming a proportion. In practical terms, proportions are used to determine if two fractions are equivalent or to solve problems involving scale and comparison. The essence of a proportion lies in its equality, which allows for the cross-multiplication method to verify if two ratios are indeed equivalent. The other options reflect concepts that are related to ratios or fractions but do not accurately describe the definition of a proportion. Understanding the nature of proportions is key to solving many mathematical problems involving ratios and comparative relationships.

3. A recipe requires 2/3 cup of sugar. If you want to make half the recipe, how much sugar do you need?

A. 1/4 cup

B. 1/3 cup

C. 2/3 cup

D. 1 cup

To determine the amount of sugar needed for half the recipe, you start with the original measurement of sugar, which is 2/3 cup. To find half of this amount, you multiply it by 1/2. The calculation involves multiplying the fraction: $\frac{2}{3} \times \frac{1}{2} = \frac{2 \times 1}{3 \times 2} = \frac{2}{6}$ Next, simplify the fraction 2/6. Both numerator and denominator can be divided by 2: $\frac{2 \div 2}{6 \div 2} = \frac{1}{3}$ Thus, half of 2/3 cup of sugar is 1/3 cup. This value makes sense within the context of the recipe, ensuring that when adjusting for smaller portions, the taste and texture remain consistent. Taking half the original quantity is crucial for accurately scaling recipes without compromising the final product's quality.

4. What is the value of x in the equation 4x + 2 = 18?

    A. x = 2

    B. x = 3

    C. x = 4

    D. x = 5

To find the value of x in the equation 4x + 2 = 18, you would start by isolating the variable x.   First, subtract 2 from both sides of the equation to eliminate the constant term on the left side. This gives you: 4x + 2 - 2 = 18 - 2, which simplifies to 4x = 16. Next, you divide both sides of the equation by 4 to solve for x: 4x / 4 = 16 / 4, resulting in x = 4. Thus, the solution to the equation is x = 4, confirming that the correct answer is x = 4.   This step-by-step simplification ensures that you correctly isolate the variable and solve for it.

5. How is a variable commonly represented?

    A. As a number

    B. As a symbol

    C. As an equation

    D. As a constant

A variable is commonly represented as a symbol, which serves as a placeholder for a value that can change. In mathematics, symbols such as x, y, and z are often used to represent variables. This symbolic representation allows for the formulation of equations and expressions where the variable can take on different values in order to solve problems or demonstrate relationships between quantities. Using a symbol to represent a variable is essential for abstraction, enabling mathematicians and students to work with concepts without needing to specify exact values. This is particularly useful in algebra, where variables are manipulated to find unknown quantities. Thus, the correct representation of a variable as a symbol is foundational to various mathematical operations and problem-solving strategies.

6. What is 15.5% of 600?

    A. 80

    B. 93

    C. 100

    D. 110

To find 15.5% of 600, you can use the formula for calculating a percentage of a number, which is: $$\text{Percentage} \times \text{Total} = \text{Part}$$ First, convert the percentage from a percentage to a decimal by dividing by 100: $$15.5\% = \frac{15.5}{100} = 0.155$$ Next, multiply this decimal by the total number (600): $$0.155 \times 600 = 93$$ Therefore, 15.5% of 600 is 93. This calculation shows the straightforward approach to determining a percentage and confirms that the answer provided is correct.   The final result verifies that when you perform the multiplication correctly with the proper conversion from percentage to decimal, you arrive at the correct part of the total, which is 93.

7. What is the equivalent expression for writing "5.7" in words?

    A. Five and seven

    B. Five point seven

    C. Five and seven tenths

    D. Five plus seven tenths

The expression "5.7" can be accurately described in words as "five and seven tenths." This is because the number "5" represents the whole number part, while the ".7" indicates seven tenths, which means that it is a fraction of ten. In numerical terms, the "5" signifies five complete units, and ".7" is equivalent to the fraction 7/10. Therefore, when combining these two components, the most precise way to articulate "5.7" is "five and seven tenths," effectively capturing both the whole number and the decimal part in a clear format. The other choices do not convey the complete and correct representation of the number. "Five and seven" neglects to mention the decimal context, while "Five point seven" is a direct but less formal way of articulating the numeral, and "Five plus seven tenths" introduces an additive operation that isn't inherent to how the number is structured. Thus, "five and seven tenths" is the most accurate verbal depiction.

8. How many meters are in one kilometer?

    A. 100 meters

    B. 500 meters

    C. 1,000 meters

    D. 2,000 meters

One kilometer is defined as a distance equal to 1,000 meters. This standardized measurement comes from the metric system, which is based on powers of ten, making it simple and logical for conversions. When considering distances, the prefix "kilo-" in kilometer indicates a factor of 1,000. Therefore, if you think of a meter as the basic unit of length in the metric system, multiplying by 1,000 gives you the number of meters in a kilometer. This ensures consistency across measurements and reinforces the clarity of the metric system's structure. Understanding this relationship helps in various practical applications, such as converting distances in exercises or real-world scenarios where metric measurements are utilized.

9. The number 65 is 25% of what number?

    A. 130

    B. 260

    C. 315

    D. 400

To determine what number 65 is 25% of, you can set up the equation based on the relationship of percentage to the whole number. In this case, if 65 represents 25% of an unknown number (let's call it X), you can express this mathematically as: $65 = 0.25 * X$ To find X, you can rearrange the equation by dividing both sides by 0.25: $X = 65 / 0.25$ Calculating 65 divided by 0.25 is the same as multiplying 65 by 4, since dividing by a fraction is equivalent to multiplying by its reciprocal: $X = 65 * 4$ $X = 260$ Thus, 65 is 25% of 260, making it the correct answer. Understanding the concept of percentages in this way helps in quickly identifying relationships between a part and a whole, which is essential for solving problems in math.

10. How many fluid ounces are equivalent to 1 pint?

A. 8 fluid ounces

B. 12 fluid ounces

C. 16 fluid ounces

D. 20 fluid ounces

In the U.S. customary measurement system, 1 pint is equivalent to 16 fluid ounces. This relationship is foundational in both cooking and various fluid measurements. Knowing that there are 2 cups in a pint, and that each cup contains 8 fluid ounces, helps to reinforce this conversion: 8 fluid ounces per cup multiplied by 2 cups gives a total of 16 fluid ounces in a pint. Understanding this conversion is useful for accurately measuring ingredients in recipes and for various applications that involve liquid measurements.

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://hesimath.examzify.com

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