

WEST-B MATHEMATICS 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. What do you call a plane figure with four sides?
 - A. Quadrilateral
 - B. Triangle
 - C. Hexagon
 - D. Circle
2. Which geometric shape is defined as having three sides and three angles?
 - A. Rectangle
 - B. Circle
 - C. Triangle
 - D. Pyramid
3. How do you determine the least common multiple (LCM) of 4 and 5?
 - A. By multiplying the two numbers together
 - B. By finding the largest of the two numbers
 - C. By adding the two numbers
 - D. By identifying 20, which is the smallest number that is a multiple of both
4. What indicates a mathematical expression?
 - A. Combination of numbers only
 - B. Use of variables and operations symbols
 - C. Simplified numbers without parentheses
 - D. Only whole numbers added together
5. What term refers to the changing of a shape in various ways, possibly altering its size?
 - A. Geometric construction
 - B. Geometric transformation
 - C. Geometric interpretation
 - D. Geometric reflection
6. What is the formula for the volume of a cylinder?
 - A. $\text{Volume} = 2\pi r^2 h$
 - B. $\text{Volume} = \pi r^2 h$
 - C. $\text{Volume} = \pi r^2 + h$
 - D. $\text{Volume} = 3\pi r^2 h$

7. What is the term for the measure of center in a set of numerical data?
- A. Mean
 - B. Median
 - C. Mode
 - D. Range
8. What type of triangle has one angle that measures 90 degrees?
- A. Acute Triangle
 - B. Obtuse Triangle
 - C. Right Triangle
 - D. Scalene Triangle
9. What symbol represents a constant in the equation for inverse variation?
- A. m
 - B. k
 - C. a
 - D. b
10. What does the term "discrete data" refer to?
- A. Data that can take any value within a range
 - B. Data that can only take specific values, often counted
 - C. Data represented in continuous form
 - D. Data that is measured in fractions

Answers

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

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Explanations

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1. What do you call a plane figure with four sides?

A. Quadrilateral

B. Triangle

C. Hexagon

D. Circle

A plane figure with four sides is known as a quadrilateral. The term "quadrilateral" is derived from the Latin words "quadri-" meaning four and "latus," meaning side. This classification includes various shapes such as squares, rectangles, trapezoids, and parallelograms, all of which have four sides. In contrast, a triangle is defined as a polygon with three sides, while a hexagon has six sides. A circle, on the other hand, is not a polygon; it is a round shape that is defined by a continuous curve with all points equidistant from a center point. Understanding these definitions is essential in geometry, where identifying and classifying shapes based on the number of sides is fundamental.

2. Which geometric shape is defined as having three sides and three angles?

A. Rectangle

B. Circle

C. Triangle

D. Pyramid

A geometric shape that is defined as having three sides and three angles is known as a triangle. This shape has distinct characteristics: each side connects two vertices, and the sum of the internal angles in a triangle always equals 180 degrees. Triangles can also be categorized based on their sides (such as equilateral, isosceles, and scalene) or their angles (such as acute, right, or obtuse). In comparing this with the other options, a rectangle has four sides and four right angles; a circle is a shape with no sides and no angles, defined as the set of all points equidistant from a center point; and a pyramid typically has a polygonal base and multiple triangular faces converging at a single vertex, which does not conform to the definition of having only three sides and three angles. Therefore, the properties of a triangle align perfectly with the definition provided in the question.

3. How do you determine the least common multiple (LCM) of 4 and 5?

A. By multiplying the two numbers together

B. By finding the largest of the two numbers

C. By adding the two numbers

D. By identifying 20, which is the smallest number that is a multiple of both

To determine the least common multiple (LCM) of two numbers, you look for the smallest positive integer that is a multiple of both numbers. In this case, the multiples of 4 are 4, 8, 12, 16, 20, and so on, while the multiples of 5 are 5, 10, 15, 20, 25, etc. The smallest common multiple shared by both lists is 20. By systematically identifying the multiples, you can observe that 20 is the first number that appears in both sequences, confirming that it is the least common multiple. This approach effectively identifies the LCM through enumeration and comparison of multiples rather than through operations like addition, multiplication, or simply choosing the larger number, which do not guarantee the smallest common multiple.

4. What indicates a mathematical expression?

- A. Combination of numbers only
- B. Use of variables and operations symbols**
- C. Simplified numbers without parentheses
- D. Only whole numbers added together

A mathematical expression is defined as a combination of numbers, variables, and operation symbols that together represent a value. The inclusion of variables allows for the representation of a broader range of concepts, as it enables the formulation of general expressions that can stand in for different numerical values. Operation symbols, such as addition, subtraction, multiplication, and division, further enhance the capability of the expression to convey more complex mathematical relationships. This understanding encompasses not just the use of numbers, but also the structural organization provided by variables and operations, which is fundamental in algebra and calculus. Options that limit the definition to only numbers, or simplified forms, do not capture the full complexity and versatility of mathematical expressions as they require either variables or operations to qualify. Thus, the comprehensive nature of an expression is indeed best described by the correct answer.

5. What term refers to the changing of a shape in various ways, possibly altering its size?

- A. Geometric construction
- B. Geometric transformation**
- C. Geometric interpretation
- D. Geometric reflection

The term that refers to the changing of a shape in various ways, which may involve altering its size, is geometric transformation. This concept encompasses various operations that can be applied to a shape, including translation, rotation, scaling (which changes size), and reflection. Each of these transformations modifies the shape's position or size in a systematic way, which is crucial for understanding how figures relate to one another in geometry. For instance, when a shape is scaled, it retains its proportions while increasing or decreasing in size, which perfectly fits the description of altering its size. This flexibility in geometric transformations allows for the exploration of relationships between shapes, symmetry, and creative designs in both two-dimensional and three-dimensional spaces. Therefore, geometric transformation is the correct term for describing the various changes that can be applied to a shape.

6. What is the formula for the volume of a cylinder?

- A. Volume = $2\pi r^2 h$
- B. Volume = $\pi r^2 h$**
- C. Volume = $\pi r^2 + h$
- D. Volume = $3\pi r^2 h$

The formula for the volume of a cylinder is derived from its geometric properties. A cylinder consists of two circular bases and a height that connects these bases. The volume formula is formulated by calculating the area of one of the circular bases and then multiplying it by the height of the cylinder. The area of a circle is calculated using the formula $A = \pi r^2$, where r is the radius of the base. Once you have the area of the base, multiplying it by the height h of the cylinder gives you the volume V of the cylinder. This relationship can be expressed mathematically as: $V = \text{Area of base} \times \text{Height} = \pi r^2 \times h$. Thus, putting it all together, the volume of a cylinder can be succinctly represented as $V = \pi r^2 h$, confirming that this option accurately represents the formula. The other choices involve incorrect combinations or formulations of the radius, height, and constants, which do not conform to the standard formula for the volume of a cylinder.

7. What is the term for the measure of center in a set of numerical data?

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

The term for the measure of center in a set of numerical data is the median. The median is defined as the middle value when a data set is organized in ascending or descending order. If the data set has an odd number of observations, the median is the value that falls right in the center. For an even number of observations, the median is the average of the two middle values. This makes the median a robust measure of central tendency, especially useful in datasets with outliers, as it provides a better representation of the central location of the data compared to measures that can be influenced by extreme values. In contrast, the mean is calculated by summing all values and dividing by the number of values, which can be skewed by outliers. The mode refers to the most frequently occurring value in a dataset. The range, representing the difference between the highest and lowest values, does not provide information about centrality at all. These distinctions highlight why the median is specifically recognized as a measure of center in data analysis.

8. What type of triangle has one angle that measures 90 degrees?

- A. Acute Triangle
- B. Obtuse Triangle
- C. Right Triangle**
- D. Scalene Triangle

A triangle with one angle measuring 90 degrees is classified as a right triangle. The defining characteristic of a right triangle is that it contains one angle that is exactly 90 degrees, which is known as a right angle. This special angle leads to unique properties and theorems specific to right triangles, such as the Pythagorean theorem, which relates the lengths of the sides of the triangle. In contrast, an acute triangle features all angles measuring less than 90 degrees, meaning no right angle is present. An obtuse triangle contains one angle greater than 90 degrees and therefore cannot be classified as a right triangle as it lacks a right angle. A scalene triangle, while it may or may not have a right angle, is defined by having all sides of different lengths and doesn't directly relate to the measure of its angles. Thus, the presence of a 90-degree angle is what distinguishes a right triangle from all other types of triangles.

9. What symbol represents a constant in the equation for inverse variation?

- A. m
- B. k**
- C. a
- D. b

In the context of inverse variation, a constant is typically represented by the letter "k." In an inverse variation relationship between two variables, say x and y , the equation is expressed as $y = k/x$, where k represents the constant of variation. This means that as one variable increases, the other decreases in such a way that their product remains constant at k . This choice indicates that k acts as the multiplier that captures the relationship between the two variables in inverse variation. The concept of inverse variation is vital in understanding how quantities interact when one increases and the other necessarily decreases, while still reflecting a fixed relationship described by the constant k .

10. What does the term "discrete data" refer to?

- A. Data that can take any value within a range
- B. Data that can only take specific values, often counted**
- C. Data represented in continuous form
- D. Data that is measured in fractions

Discrete data refers to data points that can only take on specific, separate values. This type of data is typically associated with countable items or events, where values are distinct and distinct gaps exist between them. For example, the number of students in a classroom or the number of cars in a parking lot are both discrete quantities since you can count them but cannot have fractions or decimals of these whole numbers. Discrete data contrasts with continuous data, which can take any value within a given range and can include fractions or decimals. Understanding this distinction is essential in fields like statistics and data analysis, as it influences the methods used for data representation and analysis.

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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://westbmath.examzify.com>

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

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