

California Assessment of Student Performance and Progress (CAASPP) Math Practice Exam (Sample)

Study Guide



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

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1. How are angles of elevation and depression typically measured?
 - A. In radians only
 - B. In degrees only
 - C. In both degrees and radians
 - D. In coordinate units
2. What is the area of a circle with a diameter of 10 cm? (Use $\pi \approx 3.14$)
 - A. 31.4 cm^2
 - B. 78.5 cm^2
 - C. 100 cm^2
 - D. 157 cm^2
3. What defines a polygon?
 - A. A shape with four curved sides
 - B. A three-dimensional object
 - C. A two-dimensional figure with line segments as sides
 - D. A collection of points in three-dimensional space
4. Which of the following best describes the slope of a horizontal line?
 - A. Undefined
 - B. Positive
 - C. Negative
 - D. Zero
5. If $x + 3 = 10$, what is the value of x ?
 - A. $x = 4$
 - B. $x = 5$
 - C. $x = 7$
 - D. $x = 10$
6. Which of the following actions would result in measuring an angle of depression?
 - A. Looking up at a mountain peak
 - B. Observing a bird flying at a lower altitude
 - C. Reading a book on a table
 - D. Gazing at the top of a skyscraper from the street

- 7. Which of the following best describes a rational number?**
- A. A number that is a perfect square
 - B. A number that can be written as a fraction
 - C. A number that has an infinite decimal expansion
 - D. A number that cannot be expressed in any form
- 8. What is the next prime number after 5?**
- A. 6
 - B. 7
 - C. 8
 - D. 9
- 9. Which scenario requires the use of the angle of elevation calculation?**
- A. Measuring the height of a bird above the ground
 - B. Calculating the depth of a swimming pool
 - C. Determining how far a tree casts a shadow
 - D. Finding the length of a flat surface
- 10. What does standard deviation indicate in a set of data?**
- A. The median value of the data set
 - B. The average of the data set
 - C. The spread of data from the mean
 - D. The total number of data points

Answers

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

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Explanations

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1. How are angles of elevation and depression typically measured?

- A. In radians only
- B. In degrees only
- C. In both degrees and radians**
- D. In coordinate units

Angles of elevation and depression are typically measured in both degrees and radians, which makes this the most comprehensive answer. Understanding these angles is crucial in various applications such as trigonometry, physics, and navigation. Degrees are a familiar unit of measurement, with a full circle comprising 360 degrees. This system is often used in everyday contexts, making it intuitive for many individuals when visualizing angles. On the other hand, radians are a more mathematically rigorous unit, where one radian is the angle formed when the arc length equals the radius of the circle, with a full circle measuring approximately 6.28 radians (or 2π radians). This measurement is particularly useful in higher-level mathematics and when performing calculations involving trigonometric functions. By allowing angles of elevation and depression to be expressed in both degrees and radians, it provides flexibility and can facilitate calculations in different contexts, whether in classroom settings or real-world applications. This dual capability is essential for a comprehensive understanding of geometry and trigonometry.

2. What is the area of a circle with a diameter of 10 cm? (Use $\pi \approx 3.14$)

- A. 31.4 cm²
- B. 78.5 cm²**
- C. 100 cm²
- D. 157 cm²

To find the area of a circle, the formula used is $A = \pi r^2$, where A is the area and r is the radius of the circle. The radius is half of the diameter. Given that the diameter of the circle is 10 cm, the radius can be calculated as follows: $r = \frac{\text{diameter}}{2} = \frac{10 \text{ cm}}{2} = 5 \text{ cm}$. Now substituting the radius into the area formula: $A = \pi r^2 = \pi(5 \text{ cm})^2 = \pi(25 \text{ cm}^2)$. Using the approximate value of π as 3.14: $A \approx 3.14 \times 25 \text{ cm}^2 = 78.5 \text{ cm}^2$. This calculation shows that the area of the circle is 78.5 cm², confirming that this is the correct answer. Understanding the relationship between diameter and radius is crucial, as it directly affects calculations involving the area.

3. What defines a polygon?

- A. A shape with four curved sides
- B. A three-dimensional object
- C. A two-dimensional figure with line segments as sides**
- D. A collection of points in three-dimensional space

A polygon is defined as a two-dimensional figure that is formed by connecting multiple line segments end to end to create a closed shape. The characteristics of a polygon include having straight sides, with each side being a line segment. The intersection of the sides must happen only at their endpoints, which creates the overall closed shape. In this case, the correct answer pointed out a clear and precise definition of a polygon. Options involving curved sides or three-dimensional objects do not fit the criteria necessary to be labeled as polygons, as these definitions include attributes not permissible in the structure of a polygon. Polygons are exclusively two-dimensional and consist solely of straight line segments, thus emphasizing their simplicity and geometric clarity.

4. Which of the following best describes the slope of a horizontal line?

- A. Undefined
- B. Positive
- C. Negative
- D. Zero**

The slope of a horizontal line is described as zero. Slope is defined as the change in the y-coordinate divided by the change in the x-coordinate between two points on a line. For a horizontal line, there is no change in the y-coordinate regardless of how much the x-coordinate changes, meaning that the rise (change in y) is zero while the run (change in x) is some value greater than zero. Since the formula for slope is rise/run, and the rise is zero, the overall slope is zero. This concept is vital in understanding different types of linear equations, as horizontal lines represent constant values of y across all values of x. In practical terms, this often reflects scenarios where a quantity does not change over time or distance, establishing a baseline.

5. If $x + 3 = 10$, what is the value of x?

- A. $x = 4$
- B. $x = 5$
- C. $x = 7$**
- D. $x = 10$

To find the value of x in the equation $x + 3 = 10$, we need to isolate x. This can be done by performing the same operation on both sides of the equation. Start by subtracting 3 from both sides of the equation: $x + 3 - 3 = 10 - 3$. This simplifies to: $x = 7$. Thus, the value of x is 7. In this case, the equation is set up to solve for x, and understanding how to manipulate the equation is crucial for arriving at the correct solution. The other options do not satisfy the equation when substituted back, hence they are not valid answers.

6. Which of the following actions would result in measuring an angle of depression?

- A. Looking up at a mountain peak
- B. Observing a bird flying at a lower altitude**
- C. Reading a book on a table
- D. Gazing at the top of a skyscraper from the street

Measuring an angle of depression involves looking downward from a particular point to an object that is below that point. In this context, observing a bird flying at a lower altitude fits this definition, as you are situated above the bird's flight path and need to look down to see it. The angle formed between the horizontal line of sight from your position and the line of sight to the bird is the angle of depression. The other scenarios do not represent measuring an angle of depression. For instance, looking up at a mountain peak involves an angle of elevation, as you are viewing something higher than your current position. Reading a book on a table occurs at the same level, so there is no upward or downward angle to measure. Finally, gazing at the top of a skyscraper from the street also represents an angle of elevation, as you're looking up from ground level to a point that is higher than where you are standing. Thus, observing a bird flying at a lower altitude is the only scenario that accurately describes measuring an angle of depression.

7. Which of the following best describes a rational number?

- A. A number that is a perfect square
- B. A number that can be written as a fraction**
- C. A number that has an infinite decimal expansion
- D. A number that cannot be expressed in any form

A rational number is defined as any number that can be expressed as the quotient or fraction of two integers, where the denominator is not zero. This means that for a number to be rational, it must be able to be written in the form of a fraction $\frac{a}{b}$, where a and b are integers and b is not zero. The correct choice highlights this key characteristic. Rational numbers can include integers, finite decimals, and repeating decimals, as these can all be represented in fraction form. For example, the integer 5 can be expressed as $\frac{5}{1}$, and the decimal 0.75 can be expressed as $\frac{3}{4}$. The other options describe characteristics that do not accurately define rational numbers. For instance, perfect squares (like 1, 4, 9) are indeed rational numbers, but not all rational numbers are perfect squares. Infinite decimal expansions can be either rational (like 0.333...) or irrational (like 0.14159...), so the infinite decimal characteristic is not exclusive to rational numbers. Lastly, a number that cannot be expressed in any form is not rational at

8. What is the next prime number after 5?

- A. 6
- B. 7**
- C. 8
- D. 9

The next prime number after 5 is 7. A prime number is defined as a natural number greater than 1 that has no positive divisors other than 1 and itself. The number 7 meets this criterion, as it can only be divided evenly by 1 and 7, confirming its status as a prime number. Additionally, it directly follows 5 in the sequence of natural numbers, making it the immediate next prime. The other options do not qualify as the next prime number after 5. For instance, 6 is divisible by both 1, 2, 3, and 6; 8 can be divided evenly by 1, 2, 4, and 8; and 9 is divisible by 1, 3, and 9. None of these numbers fulfill the requirement of having only two distinct positive divisors.

9. Which scenario requires the use of the angle of elevation calculation?

- A. Measuring the height of a bird above the ground**
- B. Calculating the depth of a swimming pool
- C. Determining how far a tree casts a shadow
- D. Finding the length of a flat surface

The scenario that involves the angle of elevation is when measuring the height of an object, such as a bird, from a specified point on the ground. The angle of elevation is defined as the angle formed by a horizontal line and the line of sight to an object above that horizontal line. In this case, to find out how high the bird is flying, one would observe the bird from a distance, measure the angle of elevation to the bird, and use trigonometric functions—specifically, the tangent function—to calculate its height based on that angle and the distance from the observer to the point directly below the bird. The other scenarios do not involve an angle of elevation in the same way. Measuring the depth of a swimming pool involves vertical measurement straight down rather than requiring an angle. Determining how far a tree casts a shadow involves calculations based on a light source's position, typically incorporating angles but not focusing on elevation. Finding the length of a flat surface generally concerns flat dimensions and does not involve angular measurements, so the angle of elevation would not apply in that context.

10. What does standard deviation indicate in a set of data?

- A. The median value of the data set
- B. The average of the data set
- C. The spread of data from the mean**
- D. The total number of data points

Standard deviation is a statistical measure that quantifies the amount of variation or dispersion in a set of data values. When we refer to the spread of data from the mean, we are talking about how far individual data points typically deviate from the average value (mean) of the data set. In practical terms, a low standard deviation indicates that the data points tend to be close to the mean, suggesting that the values are clustered together. In contrast, a high standard deviation signifies that the data points are spread out over a wider range of values, indicating more variability within the data set. By understanding standard deviation, one can assess the consistency of the data as well as compare the relative variability of different data sets. This is crucial in numerous fields, such as finance, research, and even daily life, as it helps in understanding data distribution and making informed decisions based on that understanding.

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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://caaspp-math.examzify.com>

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

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