

# CSET Math Subtest 1 Practice Test (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. Which expression represents a quadratic equation?
  - A.  $x^3 - x + 2$
  - B.  $x^2 - x + 2$
  - C.  $x^2 + x$
  - D.  $2x$
  
2. Which expression equals the surface area of a rectangular prism?
  - A.  $SA = 2(LW + LH + WH)$
  - B.  $SA = LW + LH + WH$
  - C.  $SA = 4(LW + LH + WH)$
  - D.  $SA = 2(LW + LH)$
  
3. In the quadratic polynomial  $ax^2 + bx + c$ , which coefficient multiplies  $x^2$ ?
  - A. c
  - B. a
  - C. b
  - D. d
  
4. Percent Increase formula: Using the percent increase formula, what is the percent increase from 20% to 30%?
  - A. 50 percent
  - B. 10 percent
  - C. 200 percent
  - D. 5 percent
  
5. What is a common first step to graph a system of linear equations?
  - A. Put each equation into slope-intercept form
  - B. Solve for the determinant
  - C. Factor both equations
  - D. Multiply equations to eliminate a term

6. If a rhombus has base  $a = 6$  and height  $h = 4$ , what is its area according to  $A = ah$ ?
- A. 16
  - B. 24
  - C. 20
  - D. 26
7. What is an equilateral triangle?
- A. ONE side length 2.
  - B. THREE sides same length, THREE angles equal measure 60 degrees.
  - C. All three angles 90 degrees.
  - D. Two sides same length, two angles equal.
8. What action must you take when multiplying or dividing both sides of an inequality by a negative number?
- A. Keep the same inequality sign
  - B. Take the reciprocal
  - C. Change both sides to zero
  - D. Switch the inequality sign
9. Median is most appropriate when the data have...
- A. If the data are unimodal.
  - B. If the data have no outliers.
  - C. If the data are normally distributed.
  - D. Outliers far outside the distribution.
10. Identify the composite number from the list.
- A. 7
  - B. 9
  - C. 11
  - D. 13

## Answers

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

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## **Explanations**

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### 1. Which expression represents a quadratic equation?

- A.  $x^3 - x + 2$
- B.  $x^2 - x + 2$**
- C.  $x^2 + x$
- D.  $2x$

A quadratic expression has the highest power of the variable equal to 2. Among the options, the one with  $x^2$  as the highest term and a nonzero coefficient is  $x^2 - x + 2$ , which fits the form  $ax^2 + bx + c$  with  $a \neq 0$ . The other options either involve a higher power ( $x^3$ ), or are linear ( $2x$ ), or, even though  $x^2 + x$  has the same highest power, it lacks the constant term and is less clearly presented in the standard three-term form. Therefore,  $x^2 - x + 2$  is the best representation of a quadratic expression.

### 2. Which expression equals the surface area of a rectangular prism?

- A.  $SA = 2(LW + LH + WH)$**
- B.  $SA = LW + LH + WH$
- C.  $SA = 4(LW + LH + WH)$
- D.  $SA = 2(LW + LH)$

Surface area is the total area of all six faces of a rectangular prism. With dimensions L, W, and H, the pairs of opposite faces have areas LW, LH, and WH, and each pair appears twice. So the total is  $2LW + 2LH + 2WH$ , which factors to  $2(LW + LH + WH)$ . This matches the expression that has a 2 multiplying the sum of LW, LH, and WH, making it the correct one. The other forms either omit the factor of 2, drop a term, or add an extra or incorrect factor, so they don't represent the surface area.

### 3. In the quadratic polynomial $ax^2 + bx + c$ , which coefficient multiplies $x^2$ ?

- A. c
- B. a**
- C. b
- D. d

In  $ax^2 + bx + c$ , the  $x^2$  term is  $ax^2$ , so the multiplier in front of  $x^2$  is a. The linear term has coefficient b, and the constant term is c. There is no d in this standard form. So the coefficient multiplying  $x^2$  is a.

4. Percent Increase formula: Using the percent increase formula, what is the percent increase from 20% to 30%?

- A. 50 percent
- B. 10 percent
- C. 200 percent
- D. 5 percent

Percent increase tells you how much a quantity grows relative to its original value. To go from 20% to 30%, the increase is 10 percentage points. But to express that as a percent increase, compare the change to the original amount:  $(30\% - 20\%) \div 20\% \times 100 = 10\% \div 20\% \times 100 = 0.5 \times 100 = 50\%$ . So the increase is 50%. The other options come from mixing up percentage points with percent change or using the wrong base: a 10 percentage point change isn't the same as a 10% increase; 200% would require the new value to be 60% (a 40-point rise, which is 200% of the original 20%); and 5% would come from dividing by 200 instead of by the original 20.

5. What is a common first step to graph a system of linear equations?

- A. Put each equation into slope-intercept form
- B. Solve for the determinant
- C. Factor both equations
- D. Multiply equations to eliminate a term

When graphing a system of linear equations, the first step is usually to rewrite each equation in slope-intercept form,  $y = mx + b$ . This form reveals the slope ( $m$ ) and the y-intercept ( $b$ ) directly, so you can plot each line by starting at the y-intercept on the y-axis and then using the slope to place a second point. Once both lines are drawn, their intersection is the solution to the system. Other methods mentioned aren't about graphing: determinants and factoring are solving or simplifying techniques, and multiplying equations to eliminate a term is a solving method rather than a way to plot the lines.

6. If a rhombus has base  $a = 6$  and height  $h = 4$ , what is its area according to  $A = ah$ ?

- A. 16
- B. 24
- C. 20
- D. 26

Area is found by multiplying the base by the perpendicular height. For a rhombus, using the base length and its height works the same way:  $A = a \times h$ . With  $a = 6$  and  $h = 4$ , the area is  $6 \times 4 = 24$ . The provided formula directly gives 24, matching the given measurements.

**7. What is an equilateral triangle?**

- A. ONE side length 2.
- B. THREE sides same length, THREE angles equal measure 60 degrees.**
- C. All three angles 90 degrees.
- D. Two sides same length, two angles equal.

An equilateral triangle has all three sides the same length and all three interior angles equal. In any triangle, the angles add up to 180 degrees, so if all three are equal, each angle must be 60 degrees. That combination—three equal sides and three 60-degree angles—defines an equilateral triangle. The description given matches this exactly: three sides of equal length and three angles measuring 60 degrees. The other options don't fit because one side length alone doesn't guarantee all sides are equal, a 90-degree angle describes a right triangle, and two equal sides with two equal angles describes an isosceles triangle, not one where all three sides and all three angles are equal.

**8. What action must you take when multiplying or dividing both sides of an inequality by a negative number?**

- A. Keep the same inequality sign
- B. Take the reciprocal
- C. Change both sides to zero
- D. Switch the inequality sign**

Switching the inequality sign is required when you multiply or divide by a negative number. Multiplying by a negative reverses the order of numbers on the number line, so the relation flips to keep the statement true. For example, if  $a > b$  and you multiply both sides by  $-1$ , you get  $-a < -b$ . The same reversal happens when dividing by a negative number. Keeping the same sign would make the resulting statement false after the operation, and taking reciprocals or altering to zero isn't the operation needed here.

**9. Median is most appropriate when the data have...**

- A. If the data are unimodal.
- B. If the data have no outliers.
- C. If the data are normally distributed.
- D. Outliers far outside the distribution.**

The median is a robust measure of center that isn't pulled toward extreme values. When there are outliers far from the rest of the data, the mean shifts toward those outliers, which can give a misleading sense of the typical value. The median, being the middle value, remains largely unaffected by those extremes, so it better represents the typical observation in such distributions. If there are no outliers or the data are normally distributed, the mean and median are similar, but the presence of outliers makes the median the more appropriate choice.

**10. Identify the composite number from the list.**

- A. 7
- B. 9**
- C. 11
- D. 13

Composite numbers are integers greater than 1 that can be written as a product of two integers both larger than 1, so they have more than two positive divisors. In the list, 7 has only 1 and 7 as divisors, so it's prime. 9 can be written as  $3 \times 3$ , giving divisors 1, 3, and 9, so it's composite. 11 and 13 are prime as well. Therefore, the composite number is 9.

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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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://csetmathsubtest1.examzify.com>**

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

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