Certify Teacher EC-6 (391) Mathematics (902) Practice Test (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. **How many total monthly payments are made on a 30-year loan?**

   A. 120

   B. 360

   C. 240

   D. 480

2. **What is the name of a polygon with eight sides?**

   A. Nonagon

   B. Hexagon

   C. Octagon

   D. Decagon

3. **Using P(color) = 0.53, P(haircut) = 0.40, and P(both) = 0.17, what is P(color OR haircut)?**

   A. 0.76

   B. 0.93

   C. 0.70

   D. 0.33

4. **Subtract 7 2/5 minus 3 3/7. What is the result in mixed number form?**

   A. 3 5/7

   B. 4 1/35

   C. 3 9/10

   D. 3 34/35

5. **If two events are independent, how do you find the probability of both occurring?**

   A. Add their probabilities

   B. Multiply their probabilities

   C. Subtract smaller from larger

   D. Take the square

6. The triple (3, 4, 5) demonstrates what in a right triangle?

- **A. An isosceles triangle**
- **B. A scalene triangle**
- **C. A median**
- **D. A Pythagorean triple (right triangle)**

7. Which of the following is a standard unit for length?

- **A. Inch**
- **B. Gram**
- **C. Liter**
- **D. Second**

8. After analyzing benchmark assessment results, which of the following could be part of a re-teach plan?

- **A. Spend a few days with students grouped by what they struggled with the most and re-teach the corresponding concept to that group**
- **B. Continue with the original plan and test again**
- **C. Move on to the next unit without reteaching**
- **D. Skip reteaching and assign more independent practice**

9. Expand the product (x+5)(x+3).

- **A. x^2 + 8x + 15**
- **B. x^2 + 15x + 15**
- **C. x^2 + 8x - 15**
- **D. x^2 - 2x + 15**

10. In 0.004, the digit 4 is in which place value?

- **A. Thousandths**
- **B. Tenths**
- **C. Hundredths**
- **D. Ten-thousandths**

Answers

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

Explanations

1. How many total monthly payments are made on a 30-year loan?

A. 120

B. 360

C. 240

D. 480

Monthly payments reflect the number of months in the loan term. A 30-year loan spans 30 years, and there are 12 months in each year, so the total number of payments is 30 × 12 = 360. In other words, you would make 360 monthly payments over the life of the loan. (For context, 10 years would be 120 payments, 20 years would be 240, and 40 years would be 480.)

2. What is the name of a polygon with eight sides?

A. Nonagon

B. Hexagon

C. Octagon

D. Decagon

Identifying polygon names by the number of sides. Polygons are named with a Greek-number prefix plus "-gon." For eight sides, the prefix is "octa-" and the suffix is "-gon," giving octagon. So the eight-sided shape is called an octagon, which has eight sides and eight angles. Other numbers correspond to different names: six sides make a hexagon, nine sides a nonagon, and ten sides a decagon.

3. Using P(color) = 0.53, P(haircut) = 0.40, and P(both) = 0.17, what is P(color OR haircut)?

A. 0.76

B. 0.93

C. 0.70

D. 0.33

When two events can both happen, the probability that at least one occurs uses the union rule: P(color OR haircut) = P(color) + P(haircut) − P(both). Here that's 0.53 + 0.40 − 0.17 = 0.76. The subtraction removes the overlap where both events happen, which would have been counted twice if we just added. So the probability is 0.76, a valid probability between 0 and 1.

4. Subtract 7 2/5 minus 3 3/7. What is the result in mixed number form?

A. 3 5/7

B. 4 1/35

C. 3 9/10

D. 3 34/35

Subtracting mixed numbers is easiest when you turn each mixed number into an improper fraction, then work with a common denominator and convert back to a mixed number. Turn 7 2/5 into 37/5 and 3 3/7 into 24/7. With a common denominator of 35, rewrite them as 259/35 and 120/35. Subtract to get 139/35. Convert that improper fraction to a mixed number: 35 goes into 139 three times with a remainder of 34, giving 3 34/35. Since 34/35 is already in lowest terms, the result is 3 34/35.

5. If two events are independent, how do you find the probability of both occurring?

A. Add their probabilities

B. Multiply their probabilities

C. Subtract smaller from larger

D. Take the square

When two events are independent, the chance that both happen is found by multiplying their individual probabilities. Independence means the outcome of one event does not affect the outcome of the other, so you can treat them as separate chances and combine them. For example, flipping a fair coin twice: the probability of heads on both flips is 1/2 times 1/2, equals 1/4. Another example is rolling two fair dice and wanting the first to show a 4 and the second to show a 5; that probability is 1/6 times 1/6, which is 1/36. If the events weren't independent, you'd need a different approach using conditional probability, specifically P(A and B) = P(A) × P(B|A).

6. The triple (3, 4, 5) demonstrates what in a right triangle?

A. An isosceles triangle

B. A scalene triangle

C. A median

D. A Pythagorean triple (right triangle)

This shows a Pythagorean triple, which are sets of three integers that can be the side lengths of a right triangle with the two shorter sides as legs and the longest side as the hypotenuse. Here, 3^2 + 4^2 = 9 + 16 = 25, and 5^2 = 25, so the relationship a^2 + b^2 = c^2 holds with integers 3, 4, and 5. That makes it a Pythagorean triple. The triangle is also scalene (all sides are different), but the term that specifically describes this right-triangle side-length relationship is a Pythagorean triple. It isn't about a median, which is a line segment inside the triangle, not about the side lengths.

7. Which of the following is a standard unit for length?

A. Inch

B. Gram

C. Liter

D. Second

Length is the distance between two points, and a standard unit for length is a fixed, agreed-upon measure. Among these options, the inch is the unit used to measure length. The gram measures mass, the liter measures volume, and the second measures time. So the inch is the only choice that quantifies length (in metric contexts, the meter is the standard, but that doesn't change which option measures length here).

8. After analyzing benchmark assessment results, which of the following could be part of a re-teach plan?

A. Spend a few days with students grouped by what they struggled with the most and re-teach the corresponding concept to that group

B. Continue with the original plan and test again

C. Move on to the next unit without reteaching

D. Skip reteaching and assign more independent practice

When you analyze benchmark results, the goal is to turn those scores into targeted instruction that closes gaps. Grouping students by the concept they struggled with and re-teaching that specific idea to each group focuses instruction where it's needed most. This targeted reteaching addresses the exact misunderstandings, gives students practice related to their gaps, and lets you check for understanding before moving on. It's more effective than sticking with the original plan and testing again without addressing the gaps, moving on to the next unit without ensuring mastery, or giving more independent practice that doesn't tackle the underlying difficulties.

9. Expand the product (x+5)(x+3).

A. x^2 + 8x + 15

B. x^2 + 15x + 15

C. x^2 + 8x - 15

D. x^2 - 2x + 15

Multiplying two binomials uses the distributive property: multiply each term in the first binomial by each term in the second, then combine like terms. For (x+5)(x+3), multiply x by x to get x^2, x by 3 to get 3x, 5 by x to get 5x, and 5 by 3 to get 15. Combine the x-terms: 3x + 5x = 8x. The constant term is 15. Put together: x^2 + 8x + 15.

10. In 0.004, the digit 4 is in which place value?

A. Thousandths

B. Tenths

C. Hundredths

D. Ten-thousandths

Place value in decimals tells how far the digit is from the decimal point. In 0.004, the digits after the decimal are tenths, hundredths, and thousandths. The 4 is in the third position after the decimal, so it is in the thousandths place. Its value is 4 × 0.001 = 0.004.

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://certifyteacherec6math902.examzify.com

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