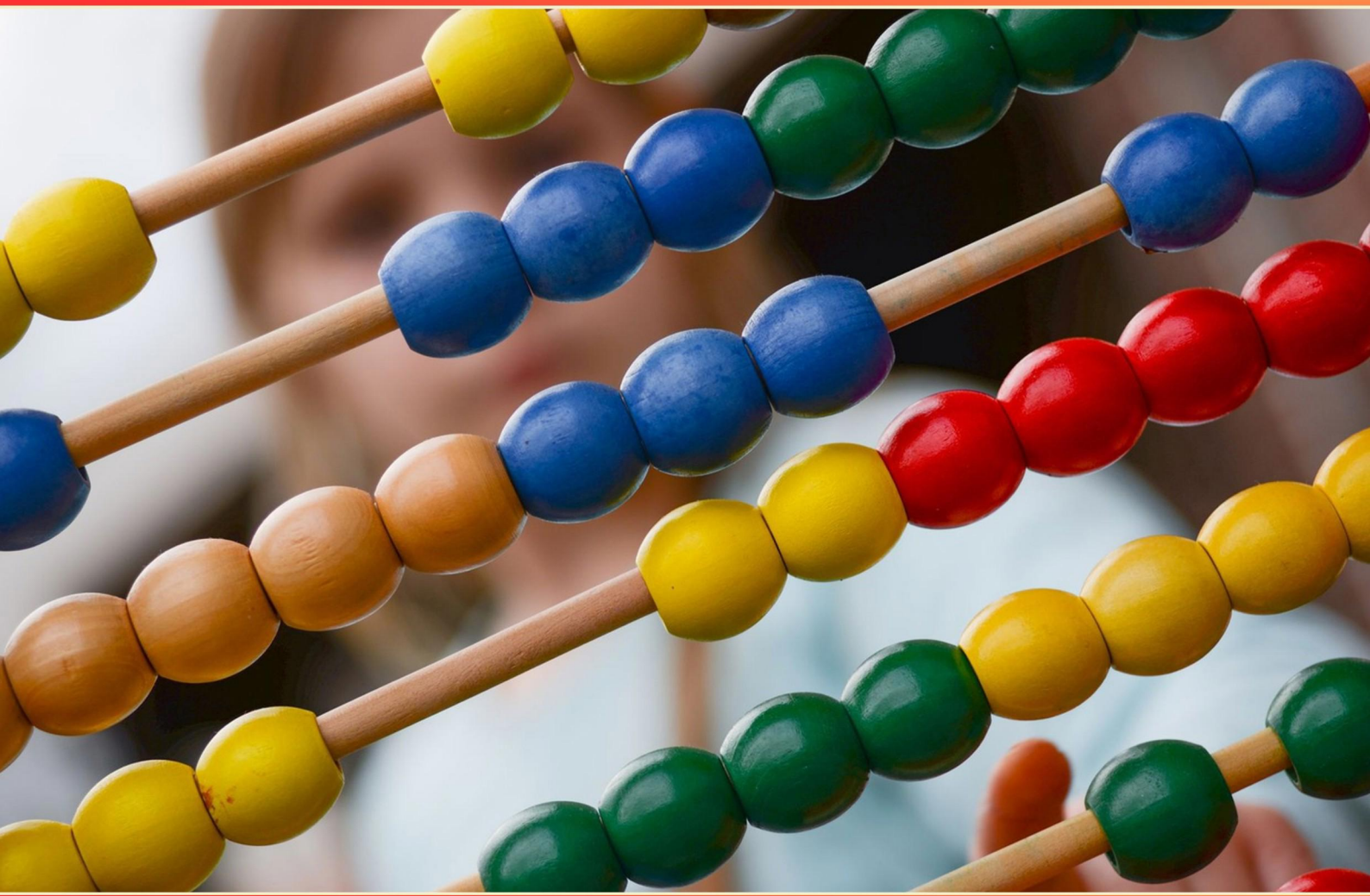
CERTIFY TEACHER EC-6 (391) MATHEMATICS (902) PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. **In a measurement-focused activity aligned with TEKS, a teacher instructs students to use a ruler to measure objects. If a student does not complete the activity successfully, what should the teacher plan next?**

   A. Plan and present a re-teach activity on using a ruler to measure length

   B. Move Emma to a different center and continue

   C. Give Emma additional worksheets with measurement problems

   D. Administer a formal assessment on length

2. **Estimate 39 × 42 by rounding to the nearest ten.**

   A. 1500

   B. 1680

   C. 1600

   D. 1700

3. **If a circle's diameter is d, which statement is true about the radius?**

   A. Radius equals d/2

   B. Radius equals d

   C. Radius equals 2d

   D. Radius equals sqrt(d)

4. **Simplify the expression 2a - 3a + 4.**

   A. -a - 4

   B. a + 4

   C. -5a + 4

   D. -a + 4

5. **A velocity vs. time graph for a runner is measured at 2-second intervals. To estimate the total distance from 0 to 12 seconds, which approach should be used?**

   A. Sum velocity values at each interval

   B. Determine the area under the velocity-time curve between 0 and 12 seconds

   C. Average velocity times 12

   D. Use the velocity at 12 seconds times 12

6. Convert 0.75 to a fraction in lowest terms.

A. 75/100

B. 2/3

C. 3/4

D. 4/5

7. From the 400-student gift survey, what is the probability of not receiving a Mother's Day gift?

A. 0.88

B. 0.12

C. 0.92

D. 0.77

8. What is 0.75 minus 0.25?

A. 0.25

B. 0.75

C. 0.60

D. 0.50

9. What is the distance between (0,0) and (3,4)?

A. 5

B. 6

C. 7

D. 8

10. Tanya is helping a third grade student check for mathematical reasonableness. If the student calculated 8 + 7 = 21, which estimation technique could help?

A. Doubling

B. Halving

C. Rounding to the nearest ten

D. Breaking apart numbers and recombining

Answers

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

Explanations

1. In a measurement-focused activity aligned with TEKS, a teacher instructs students to use a ruler to measure objects. If a student does not complete the activity successfully, what should the teacher plan next?

A. Plan and present a re-teach activity on using a ruler to measure length

B. Move Emma to a different center and continue

C. Give Emma additional worksheets with measurement problems

D. Administer a formal assessment on length

When students aren't able to complete a measurement task successfully, the best next step is a targeted reteach focused on using a ruler to measure length. This allows you to address specific misunderstandings right away, model the correct technique, and give guided practice so students can demonstrate mastery before moving on. Think about what often causes trouble with rulers: starting at zero, choosing the right unit, reading the marks accurately, and aligning the edge of the object with the correct line. A re-teach session should include a quick demonstration showing how to place the ruler, how to read measurements to the nearest appropriate increment, and then hands-on practice with several simple objects. Provide immediate feedback, check for correct reading, and use guided prompts to help students verbalize the steps they take. After this focused instruction and practice, you'd recheck the student's understanding with a brief, informal check to confirm mastery. This approach aligns with ongoing, formative teaching practices and ensures the student is ready to engage with measurement tasks again. Other options don't directly address the skill gap with targeted instruction and rapid feedback, which is why reteaching is the more effective choice here.

2. Estimate 39 × 42 by rounding to the nearest ten.

A. 1500

B. 1680

C. 1600

D. 1700

Rounding to the nearest ten to estimate a product means replacing each factor with a nearby multiple of ten and multiplying the simpler numbers. Round 39 to 40 and 42 to 40. Then multiply 40 by 40 to get 1600. This is a sensible estimate because the actual product is 39 × 42 = 1638, which sits between 1600 and 1700 and is closer to 1600. Using both numbers rounded to the nearest ten gives the best straightforward estimate here, so 1600 is the most reasonable choice.

3. If a circle's diameter is d, which statement is true about the radius?

A. Radius equals d/2

B. Radius equals d

C. Radius equals 2d

D. Radius equals sqrt(d)

Radius is half of the diameter. The radius is the distance from the center to any point on the circle, while the diameter stretches across the circle through the center and is made up of two radii end to end. That means the diameter's length is twice the radius. So, if the diameter is d, the radius must be d/2. For a quick check, double the radius to get the diameter, or halve the diameter to get the radius; for example, a diameter of 10 gives a radius of 5.

4. Simplify the expression 2a - 3a + 4.

A. -a - 4

B. a + 4

C. -5a + 4

D. -a + 4

Combining like terms by adding coefficients is the main idea. The expression has two terms with a: 2a and -3a. Add their coefficients: 2 + (-3) = -1, so that part becomes -a. The constant 4 stays as is. Put together, the simplified expression is -a + 4. Options that would mis-handle this include treating the a terms as if they multiply to -5a, which isn't the case because you're adding coefficients, not multiplying. Or dropping the a term and leaving just 4, or changing the sign of the constant. The correct form preserves the -a from combining the a terms and keeps the +4 as the constant.

5. A velocity vs. time graph for a runner is measured at 2-second intervals. To estimate the total distance from 0 to 12 seconds, which approach should be used?

A. Sum velocity values at each interval

B. Determine the area under the velocity-time curve between 0 and 12 seconds

C. Average velocity times 12

D. Use the velocity at 12 seconds times 12

Distance is found by measuring how much area under the velocity–time curve accumulates over a time interval. That's because velocity tells you how fast position is changing, and integrating velocity over time adds up all those little changes to give total distance. With measurements every 2 seconds, you estimate the total distance from 0 to 12 seconds by calculating the area under the curve across that whole span. In practice, that means summing the velocity values over each 2-second block and combining them to form the total area, which is the Riemann-sum idea: velocity times the interval width, added up across all intervals. This area-under-the-curve approach directly corresponds to distance traveled. Summing the velocity values alone misses how long each velocity lasts, so it wouldn't give distance. Using an average velocity times the total time would only be exact if velocity were constant (or if the average properly reflects the whole stretch), which isn't guaranteed here. Relying on the velocity at the end point or at a single moment ignores variation throughout the interval, leading to a poor estimate.

6. Convert 0.75 to a fraction in lowest terms.

A. 75/100

B. 2/3

C. 3/4

D. 4/5

Think of a decimal as a fraction using place value. 0.75 has two digits after the decimal, so it equals 75 over 100. To get the fraction in lowest terms, divide numerator and denominator by their greatest common divisor, which is 25. That gives 75 ÷ 25 = 3 and 100 ÷ 25 = 4, so the fraction is 3/4. This is in lowest terms because 3 and 4 share no common factors other than 1. The other options correspond to different numbers or to the unreduced form: 2/3 is about 0.666..., not 0.75; 4/5 is 0.8, also not 0.75; and 75/100 simplifies to 3/4, which is already the answer in lowest terms.

7. From the 400-student gift survey, what is the probability of not receiving a Mother's Day gift?

A. 0.88

B. 0.12

C. 0.92

D. 0.77

This question uses the idea of a complement in probability. If 12% of students receive a Mother's Day gift, then the chance of not receiving one is the remaining portion: 1 − 0.12 = 0.88. In other words, 88% of students do not receive a gift. Checks with the numbers: 0.12 × 400 = 48 receive gifts, so 400 − 48 = 352 do not receive. The ratio 352/400 simplifies to 0.88, confirming the probability of not receiving a gift is 0.88.

8. What is 0.75 minus 0.25?

A. 0.25

B. 0.75

C. 0.60

D. 0.50

When subtracting decimals, line up the digits after the decimal point and subtract each place value. Here both numbers have two digits after the decimal, so it's straightforward: 0.75 minus 0.25 equals 75 minus 25 in hundredths, which is 50 hundredths, i.e., 0.50. A quick way to see it is to think in dollars and cents: 75 cents minus 25 cents leaves 50 cents, which is 0.50 dollars. Since you're removing a quarter from three quarters, you're left with one half, which is 0.50. The other numbers would reflect subtracting different amounts (for example, 0.50 would come from removing 0.25? or 0.25 would come from removing 0.50), but the operation here specifically yields 0.50.

9. What is the distance between (0,0) and (3,4)?

A. 5

B. 6

C. 7

D. 8

The distance between two points on a coordinate plane uses the Pythagorean theorem. From the origin to (3, 4) you move 3 units horizontally and 4 units vertically, forming a right triangle. The distance is the hypotenuse: sqrt(3^2 + 4^2) = sqrt(9 + 16) = sqrt(25) = 5. So the distance is 5 units, which matches the well-known 3-4-5 right triangle.

10. Tanya is helping a third grade student check for mathematical reasonableness. If the student calculated 8 + 7 = 21, which estimation technique could help?

A. Doubling

B. Halving

C. Rounding to the nearest ten

D. Breaking apart numbers and recombining

Estimating by comparing to doubling is a quick way to check sums when the addends are close in value. With 8 and 7, you can think of the total as about twice one of the numbers: 2 × 8 is 16 (and 2 × 7 would be 14). So the sum should be around 15–16. Seeing 21 sticks out as far from that estimate, signaling a likely miscalculation. Doubling gives a fast, precise enough check for small, nearby numbers. Rounding to the nearest ten would give 20, which is also a rough check but less precise for such small numbers. Breaking apart and recombining could work to get to 15 exactly, but it takes more steps; doubling is the quickest way to verify reasonableness here.

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!