

ONTARIO MATHEMATICS PROFICIENCY PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

<https://ontario-mathematicsproficiency.examzify.com>



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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

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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 can be determined at the y-intercept?**
 - A. The point where the line changes direction
 - B. The maximum value on the graph
 - C. The starting value of the function
 - D. The endpoint of the line
- 2. Which competency category encourages students to act on their rights and assert their needs?**
 - A. Using Tools Interactively
 - B. Acting Autonomously
 - C. Knowledge and Understanding
 - D. Thinking
- 3. What is the probability of rolling a sum of 7 with two six-sided dice?**
 - A. $\frac{1}{6}$
 - B. $\frac{1}{12}$
 - C. $\frac{1}{3}$
 - D. $\frac{1}{4}$
- 4. What is an essential aspect of a "Learning Gap" assessment?**
 - A. Assessing solely on final exam results
 - B. Evaluating a student's engagement in class
 - C. Comparing actual achievement against potential achievement
 - D. Focusing only on classroom participation
- 5. What does the term 'function' typically refer to in mathematics?**
 - A. A set of ordered pairs
 - B. A graph of points
 - C. An operation that assigns each input exactly one output
 - D. A method for solving equations
- 6. What is 15% of 200?**
 - A. 25
 - B. 30
 - C. 20
 - D. 15

7. Which number represents the greatest value: $\frac{1}{2}$, $\frac{2}{3}$, or $\frac{3}{4}$?

- A. $\frac{1}{2}$
- B. $\frac{2}{3}$
- C. $\frac{3}{4}$
- D. None of the above

8. What is the value of 45 degrees in radians?

- A. $\frac{\pi}{2}$ radians
- B. $\frac{\pi}{4}$ radians
- C. $\frac{3\pi}{4}$ radians
- D. $\frac{\pi}{3}$ radians

9. How do you convert 75% to a decimal?

- A. 0.5
- B. 0.75
- C. 0.85
- D. 1.0

10. What is the result of $(50 \div 5 + 3 \times 2)$?

- A. 8
- B. 10
- C. 12
- D. 16

Answers

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

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Explanations

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1. What can be determined at the y-intercept?

- A. The point where the line changes direction
- B. The maximum value on the graph
- C. The starting value of the function**
- D. The endpoint of the line

The y-intercept of a graph represents the point where the line crosses the y-axis. This occurs when the value of x is zero. Therefore, at the y-intercept, one can determine the starting value of the function, which is the output (or y-value) when x equals zero. This starting value provides crucial information about the behavior of the function at the beginning of its domain. In contrast, the other options do not accurately describe the significance of the y-intercept. The direction change of a line usually pertains to points where it turns, rather than where it intersects the y-axis. The maximum value of a graph can occur at various points depending on the function, not specifically at the y-intercept. Lastly, an endpoint of a line is not defined by the y-intercept, especially in the context of straight lines which extend infinitely in both directions unless stated otherwise. Thus, the starting value of the function at the y-intercept becomes the correct choice.

2. Which competency category encourages students to act on their rights and assert their needs?

- A. Using Tools Interactively
- B. Acting Autonomously**
- C. Knowledge and Understanding
- D. Thinking

The choice that reflects the competency category encouraging students to act on their rights and assert their needs focuses on the development of self-advocacy and independence. When students are able to act autonomously, they demonstrate an understanding of their own rights and responsibilities. This competency provides them with the confidence and skills to express their needs effectively, make informed choices, and take initiative in various situations. This category is crucial for fostering personal growth, as it empowers students to navigate their environment while asserting their opinions and standing up for themselves. In essence, acting autonomously encompasses the ability to recognize one's own agency and to act decisively in pursuit of personal goals and well-being. The other competency categories, while important, do not specifically emphasize the ability to advocate for oneself. For instance, using tools interactively relates more to the practical application of resources, while knowledge and understanding focus on cognitive skills. Thinking typically addresses critical and creative thought processes rather than personal advocacy.

3. What is the probability of rolling a sum of 7 with two six-sided dice?

- A. $1/6$**
- B. $1/12$
- C. $1/3$
- D. $1/4$

To find the probability of rolling a sum of 7 with two six-sided dice, first, consider all the possible outcomes when rolling the dice. Each die has 6 faces, which results in a total of 36 different combinations when rolling two dice (6 faces on the first die multiplied by 6 faces on the second die). Next, determine the successful outcomes that yield a sum of 7. The possible pairs of dice rolls that add up to 7 are: - (1, 6) - (2, 5) - (3, 4) - (4, 3) - (5, 2) - (6, 1) There are 6 successful outcomes that result in a sum of 7. Now, to calculate the probability, use the formula for probability, which is the number of successful outcomes divided by the total number of possible outcomes. Here, that would be: $\text{Probability} = \text{Number of successful outcomes} / \text{Total number of outcomes}$
 $\text{Probability} = 6 / 36 = 1 / 6$ This calculation demonstrates that the probability of rolling a sum of 7 with two six-sided dice is indeed $1/6$.

4. What is an essential aspect of a "Learning Gap" assessment?

- A. Assessing solely on final exam results
- B. Evaluating a student's engagement in class
- C. Comparing actual achievement against potential achievement**
- D. Focusing only on classroom participation

An essential aspect of a "Learning Gap" assessment is comparing actual achievement against potential achievement. This process involves identifying the difference between what a student has learned and what they are capable of learning based on their skills, background knowledge, and instructional standards. By focusing on this gap, educators can pinpoint specific areas where a student may need additional support or resources, allowing for targeted interventions that can help bridge that gap and improve overall learning outcomes. Understanding this distinction between actual and potential achievement is critical in developing effective educational strategies and personalized learning plans.

5. What does the term 'function' typically refer to in mathematics?

- A. A set of ordered pairs
- B. A graph of points
- C. An operation that assigns each input exactly one output**
- D. A method for solving equations

In mathematics, the term 'function' specifically refers to a relationship that assigns each element from one set, known as the domain, to exactly one element in another set, called the codomain. This characteristic ensures that for every input value, there is a unique output value. This concept is fundamental because it allows for the systematic study of how inputs relate to outputs and is a cornerstone of mathematical analysis. By defining a function this way, it becomes easier to analyze and predict behaviors in various mathematical contexts, such as algebra, calculus, and beyond. This precise definition distinguishes functions from more general relationships or associations, which might not require a unique output for each input. Other concepts listed, like a set of ordered pairs, a graph of points, or methods for solving equations, do play roles in the broader study of functions but do not encapsulate the fundamental definition of a function itself. For instance, a graph of points may represent a function visually, and a set of ordered pairs can describe a function but doesn't define what a function is. Similarly, methods for solving equations are techniques that may involve functions but are not a definition of them. Thus, focusing on the unique input-output characteristic is crucial to understanding what a function is in mathematics.

6. What is 15% of 200?

- A. 25
- B. 30**
- C. 20
- D. 15

To calculate 15% of 200, you can first express 15% as a decimal. This is done by dividing 15 by 100, which equals 0.15. Next, you multiply this decimal by 200 to find the percentage: $0.15 \times 200 = 30$. Thus, 15% of 200 is indeed 30. This is a straightforward calculation that can be verified by recognizing that finding a percentage involves converting the percentage to a decimal and then performing a multiplication by the whole number in question.

7. Which number represents the greatest value: $\frac{1}{2}$, $\frac{2}{3}$, or $\frac{3}{4}$?

- A. $\frac{1}{2}$
- B. $\frac{2}{3}$
- C. $\frac{3}{4}$**
- D. None of the above

When comparing the fractions $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$, it's effective to convert them to a common denominator or to a decimal form to determine which is the largest. Starting with the fractions in decimal form: - $\frac{1}{2}$ is equal to 0.5 - $\frac{2}{3}$ is approximately 0.6667 - $\frac{3}{4}$ is equal to 0.75 Now, looking at these decimal values, it's clear that $0.5 < 0.6667 < 0.75$. Thus, $\frac{3}{4}$ (0.75) has the greatest value among the three fractions. This demonstrates that $\frac{3}{4}$ indeed represents the highest value among the options provided. The process of comparing fractions through conversion helps in accurately identifying their relative sizes.

8. What is the value of 45 degrees in radians?

- A. $\frac{\pi}{2}$ radians
- B. $\frac{\pi}{4}$ radians**
- C. $\frac{3\pi}{4}$ radians
- D. $\frac{\pi}{3}$ radians

To convert degrees to radians, you can use the conversion factor that 180° is equivalent to π radians. This means that to convert degrees to radians, you multiply the degree measure by $\frac{\pi}{180}$. For 45° , the calculation can be done as follows: $\text{Radians} = 45 \times \frac{\pi}{180}$ When you simplify this, you notice that 45 and 180 can both be divided by 45: $\frac{45}{180} = \frac{1}{4}$ Thus, 45° is equal to $\frac{\pi}{4}$ radians. This confirms that the correct answer is indeed the conversion of 45° into radians, accurately yielding the result $\frac{\pi}{4}$.

9. How do you convert 75% to a decimal?

- A. 0.5
- B. 0.75**
- C. 0.85
- D. 1.0

To convert a percentage to a decimal, you divide the percentage by 100. In this case, to convert 75% to a decimal, you perform the calculation: $75 \div 100 = 0.75$ This means that 75% is equivalent to 0.75 in decimal form. The conversion works because the term "percent" literally means "per hundred," so dividing by 100 shifts the decimal point two places to the left, transforming a percentage into its decimal equivalent. Thus, the correct answer is 0.75.

10. What is the result of $(50 \div 5 + 3 \times 2)$?

- A. 8
- B. 10
- C. 12
- D. 16**

To solve the expression $(50 \div 5 + 3 \times 2)$, we need to follow the order of operations, commonly remembered by the acronym PEMDAS (Parentheses, Exponents, Multiplication and Division (from left to right), Addition and Subtraction (from left to right)). First, we perform the division: 1. $(50 \div 5 = 10)$ Next, we address the multiplication: 2. $(3 \times 2 = 6)$ Now, we can add the results from the two calculations: 3. $(10 + 6 = 16)$ Thus, the final result of the entire expression $(50 \div 5 + 3 \times 2)$ is 16, which corresponds to the correct answer. The operations were carried out in accordance with the proper order, confirming that 16 is indeed the correct solution.

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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://ontario-mathematicsproficiency.examzify.com>

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

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