Leaving Certificate Mathematics Definitions 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

1. **In which study is a treatment applied and the effects observed?**

   A. Designed experiment

   B. Observational study

   C. Case study

   D. Longitudinal study

2. **Which of the following is a polynomial?**

   A. sqrt(x) + 5

   B. 3x^2 + 4x + 5

   C. x^(3/2)

   D. 2/x

3. **If two triangles are congruent, what can be said about their areas?**

   A. They are different

   B. They are not related

   C. They are equal

   D. One is twice the other

4. **Population is divided into subgroups based on similar characteristics and a simple random sample is drawn from each subgroup.**

   A. Stratified random sampling

   B. Systematic random sampling

   C. Cluster sampling

   D. Quota sampling

5. **Two lines that never meet and stay the same distance apart are called**

   A. Skew lines

   B. Perpendicular lines

   C. Parallel lines

   D. Intersecting lines

6. Data collected by the person who was going to use it is called

A. Primary data

B. Secondary data

C. Qualitative data

D. Explanatory variable

7. An angle that measures between 90 and 180 degrees is called an obtuse angle.

A. Acute angle

B. Obtuse angle

C. Right angle

D. Reflex angle

8. Which example is ordinal categorical data?

A. Grades A, B, C

B. Hair colour

C. Temperature in Celsius

D. Number of siblings

9. Which of the following are like terms in 4x^2 and 9x^2?

A. 7x and 3x^2

B. 4x^2 and 9x^2

C. 5xy and 2yz

D. 2a and 3b

10. Which term is defined as a number left in square root form?

A. Absolute Value

B. Surd

C. Discriminant

D. Polynomial

Answers

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

Explanations

1. In which study is a treatment applied and the effects observed?

A. Designed experiment

B. Observational study

C. Case study

D. Longitudinal study

When you actively apply a treatment to participants and then observe the effects, you're setting up a study that tests causality through deliberate manipulation. This kind of design, where the researcher assigns who receives the treatment and who does not (often with random assignment) and then compares outcomes, is the essence of a designed experiment. The key idea is control and manipulation: you change the exposure and measure what happens, which helps isolate the treatment's effect from other factors. Observational studies, in contrast, just watch and measure what occurs without assigning treatments, so they can reveal associations but not prove causation. A case study goes in-depth on a single or a few cases, focusing on detailed description rather than causal testing. A longitudinal study follows subjects over time, frequently observational, tracking changes but not necessarily involving a deliberate treatment assignment. So the best fit for applying a treatment and observing its effects is a designed experiment.

2. Which of the following is a polynomial?

A. sqrt(x) + 5

B. 3x^2 + 4x + 5

C. x^(3/2)

D. 2/x

Polynomials are expressions formed by summing terms a_n x^n where n is a nonnegative integer and a_n are constants. The expression 3x^2 + 4x + 5 fits this pattern, with terms x^2, x, and x^0 (the constant 1), using exponents 2, 1, and 0, and coefficients 3, 4, and 5. The other expressions have either fractional exponents (x^(1/2), x^(3/2)) or a negative exponent (2/x), which are not allowed in polynomials. Therefore, the expression 3x^2 + 4x + 5 is the polynomial.

3. If two triangles are congruent, what can be said about their areas?

A. They are different

B. They are not related

C. They are equal

D. One is twice the other

Two triangles that are congruent are identical in size and shape; you can move one onto the other with only sliding, rotating, or flipping. Because these are rigid motions, they preserve area. If you take a base in each triangle and the corresponding height, the area formula gives the same result for both, so the areas must be equal. Therefore, the correct statement is that their areas are equal. The other options contradict congruence: you can't have different areas, no relation, or one being twice the other.

4. Population is divided into subgroups based on similar characteristics and a simple random sample is drawn from each subgroup.

A. Stratified random sampling

B. Systematic random sampling

C. Cluster sampling

D. Quota sampling

Dividing the population into homogeneous subgroups and drawing a simple random sample from each is stratified random sampling. The idea is that each subgroup, or stratum, contains similar members with respect to the trait you care about, so sampling within each stratum gives more precise overall estimates and ensures representation of every part of the population. Because you perform random sampling inside every subgroup, you maintain randomness while reducing variability that comes from differences between groups. This approach differs from systematic random sampling, which selects units at a fixed interval from a list without forming strata; from cluster sampling, which groups the population into clusters and samples entire clusters (or samples within only some clusters) rather than from every subgroup; and from quota sampling, which uses non-random selection to meet predefined subgroup quotas.

5. Two lines that never meet and stay the same distance apart are called

A. Skew lines

B. Perpendicular lines

C. Parallel lines

D. Intersecting lines

If two lines never meet and stay the same distance apart, they are parallel lines. This means they run in the same direction and, when you measure the perpendicular distance between them at any point, that distance is constant. Skew lines are non-parallel lines in space that don't lie in the same plane, so they don't have a fixed distance everywhere. Perpendicular lines intersect at a right angle, so they do meet. Intersecting lines share a point of crossing, so they do not stay apart.

6. Data collected by the person who was going to use it is called

A. Primary data

B. Secondary data

C. Qualitative data

D. Explanatory variable

Data collected by the person who will use it is called primary data. This means you gather the information yourself for your specific study, so you know exactly how and why it was collected. Data that someone else collected for a different purpose and that you use is secondary data. Qualitative data describes non-numeric qualities or categories, not the source of the data, and an explanatory variable is a variable used to explain changes in another variable, not about who collected the data.

7. An angle that measures between 90 and 180 degrees is called an obtuse angle.

A. Acute angle

B. Obtuse angle

C. Right angle

D. Reflex angle

Angles are classified by size. An obtuse angle is defined as an angle that measures more than 90 degrees but less than 180 degrees. The statement describes an angle that lies between 90 and 180 degrees, which precisely matches that definition, so it identifies an obtuse angle. Remember the endpoints: 90 degrees is a right angle, and 180 degrees is a straight angle, so they are not included in the obtuse range. For contrast, an acute angle is under 90 degrees, and a reflex angle is between 180 and 360 degrees. For example, 120 degrees is obtuse, 60 degrees is acute, 90 degrees is right, and 210 degrees is reflex.

8. Which example is ordinal categorical data?

A. Grades A, B, C

B. Hair colour

C. Temperature in Celsius

D. Number of siblings

Ordinal data are categories that have a natural order, so one category comes before or after another in a ranked sense, even if the exact differences between them aren't defined. Grades like A, B, and C fit this because there is a clear order: A is higher than B, which is higher than C. The gaps between grades aren't assumed to be equal, but the ranking matters. Hair colour is a nominal category with no inherent order. Temperature in Celsius is numerical data, a measure on a scale. The number of siblings is a count, also numerical. So the grades example is the ordinal categorical data.

9. Which of the following are like terms in 4x^2 and 9x^2?

A. 7x and 3x^2

B. 4x^2 and 9x^2

C. 5xy and 2yz

D. 2a and 3b

Like terms are terms that have the same variable raised to the same power. Here, both terms are x^2, so they share the same variable part and are like terms. The coefficients 4 and 9 don't affect this classification, and you could combine them as 4x^2 + 9x^2 = 13x^2. The other pairs don't fit because one has different powers (x vs x^2), or uses different variables (xy and yz, or a and b), so they aren't like terms.

10. Which term is defined as a number left in square root form?

A. Absolute Value

B. Surd

C. Discriminant

D. Polynomial

A surd is a number that stays under a square root sign and cannot be simplified away to a whole number. That’s exactly what “a number left in square root form” describes: the radical remains because it can’t be replaced by a rational value. For example, sqrt(2) cannot be simplified, so it’s a surd. In contrast, absolute value measures distance on the number line, the discriminant is a part of the quadratic formula, and a polynomial is a general algebraic expression with powers—none of these describe a number that must stay under a square root.

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://leavingcertmathsdef.examzify.com

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