ЗАКАРПАТСЬКИЙ УГОРСЬКИЙ ІНСТИТУТ ІМЕНІ ФЕРЕНЦА РАКОЦІ ІІ
II. RÁKÓCZI FERENC KÁRPÁTALJAI MAGYAR FŐISKOLA

Кафедра математики та інформатики
Matematika és Informatika Tanszék

«ENGLISH FOR MATHEMATICIANS»
(МЕТОДИЧНІ ВКАЗІВКИ ДЛЯ КОНТРОЛЬНИХ РОБІТ)

(для студентів 4-го курсу спеціальності 014 Середня освіта (Математика)

ENGLISH FOR MATHEMATICIANS

(Módszertani utmutató dolgozatokhoz)

Перший (бакалаврський) / Alapképzés (BA)
(ступінь вищої освіти /a felsőoktatás szintje)

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(галузь знань / képzési ág)

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"Matematika"
(освітня програма / képzési program)

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Посібник з англійської мови для математиків призначений для студентів IV курсу Закарпатського угорського інституту імені Ференца Ракоці спеціальності 014 Середня освіта (Математика) заочної форми навчання з метою організації контрольної роботи з курсу "Іноземна мова за професійним спрямуванням".

Матеріал призначений для використання як навчально-методичний посібник з дисципліни "Іноземна мова за професійним спрямуванням ".

Затверджено до використання у навчальному процесі
на засіданні кафедри математики та інформатики
(протокол № 10 від «23» червня 2025 року)

Розглянуто та рекомендовано Радою із забезпечення якості вищої освіти
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Підготовлено до видання у електронній формі (PDF) кафедрою математики та інформатики з Видавничим відділом Закарпатського угорського інституту імені Ференца Ракоці II

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За зміст посібника відповідальність несуть розробники.

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Az English for mathematicians a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola, IV. éves, matematika szakos, levelezős hallgatóinak készült, a Szakmai idegen nyelv c. tantárgy alaposabb tanulmányozásának és elsajátításának megkönnyítése céljából.

Ez a jegyzet elsősorban matematika szakos hallgatók számára készült, de hasznos lehet mindazok számára, akik bármely más szakon tanulnak matematikát.

Az oktatási folyamatban történő felhasználását jóváhagyta
a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola
Matematika és Informatika Tanszéke
(2025. június 23, 10. számú jegyzőkönyv).

Megjelentetésre javasolta a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola
Minőségbiztosítási Tanácsa
(2025. augustzus 26, 7. számú jegyzőkönyv).

Elektronikus formában (PDF fájlformátumban) történő kiadásra javasolta
a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola Tudományos Tanácsa
(2025. augustzus 28, 8. számú jegyzőkönyv).

Kiadásra előkészítette a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola
Matematika és Informatika Tanszéke és Kiadói Részlege.

Szerkesztő:

SZTOJKA MIROSZLÁV – a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola Matematika és Informatika Tanszékének docense

Szakmai lektorok:

MLÁVEC JURIJ – FIZIKA ÉS MATEMATIKA TUDOMÁNYOK KANDIDÁTUSA, DOCENS, AZ UNGVÁRI NEMZETI EGYETEM KIBERNETIKA ÉS ALKALMAZOTT MATEMATIKA TANSZÉKÉNEK DOCENSE;

VRÁBELY TAMÁS–Filológia Tudományok Kandidátusa, II. RÁKÓCZI FERENC KÁRPÁTALJAI MAGYAR FŐISKOLA ANGOL TANSZÉKI CSOPORT, FILOLÓGIA TANSZÉKÉNEK DOCENSE.

A kiadásért felel:

DOBOS Sándor – a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola Kiadói Részlegének vezetője

A tartalomért kizárólag a jegyzet szerkesztője felel.

Kiadó: a II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola (cím: 90 202, Beregszász, Kossuth tér 6. E-mail: foiskola@kmf.uz.ua)

Contents

Variant 1

Part I. Vocabulary and Terminology (10 points)

Task 1. Match the terms with their correct definitions. (5 × 1 point)

1. Academic background
2. Specialization
3. Research interests
4. Professional context
5. Networking

a) The area of study or expertise that a person focuses on.
b) The courses, degrees, and training someone has completed.
c) Exchanging information and establishing connections with colleagues.
d) Topics or fields a researcher is particularly focused on.
e) Situations in which formal communication related to one's career or studies takes place.

Task 2. Fill in the blanks with the correct term from the box. (5 × 1 point)

(specialization, methodology, academic training, pursue, competence)

1. I am currently _____ a Bachelor's degree in Mathematics.
2. My _____ includes courses in algebra, geometry, and statistics.
3. Her main _____ is applied probability theory.
4. In my thesis, I use a quantitative research _____.
5. Effective professional communication requires both knowledge and _____.

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions. (5 × 2 points + 5 points)

Text:
Effective professional communication in mathematics and computer science involves much more than just presenting technical results. It requires clarity, precision, and the ability to adapt the message to different audiences. For example, when presenting research at an international conference, a mathematician should emphasize the broader significance of their findings, while in a classroom context, the focus should be on step-by-step explanations. In both cases, using formal structures, appropriate vocabulary, and coherent organization is crucial.

Questions:

1. What are the key elements of effective professional communication?
2. Why should mathematicians adapt their message depending on the audience?
3. How does communication differ in a conference and in a classroom?
4. What role does vocabulary play in professional communication?
5. Summarize the text in 2–3 sentences.

Part III. Writing (15 points)

Task 4. Write a formal self-introduction (120–150 words) suitable for an academic conference. Your introduction should include:

- Your name and study program.
- Your academic background (courses, training).
- Your specialization and research interests.
- Your future goals.

Evaluation criteria: vocabulary, grammar, coherence, style.

Part IV. Speaking (10 points)

Task 5. Prepare a 2-minute oral report (outline only, written). Imagine you are introducing your research topic to a small group of international students. In your outline, include:

- Opening sentence.
- Main research focus.
- Why your topic is important.
- A short conclusion with future perspectives.

(You will be evaluated on logical structure, academic vocabulary, and clarity.)

Part V. Grammar in Context (10 points)

Task 6. Rewrite the following sentences using the **passive voice**. (5 × 2 points)

1. Mathematicians present their research at conferences.
2. Teachers explain the methodology to students.
3. Researchers use English as the main language of publications.
4. We analyze the collected data in detail.
5. Students will prepare a presentation for next week.

Variant 2

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the correct word or phrase to complete the sentences. (5 × 1 point)

1. During an international conference, it is important to present your ideas with **(clarity / casualness)**.
2. A well-written CV should emphasize your **(research contributions / personal hobbies)**.
3. When describing your academic background, always highlight your **(credentials / entertainments)**.
4. In academic networking, the ability to establish **(reliable contacts / random conversations)** is essential.
5. A researcher's self-presentation should be tailored to **(the target audience / informal chatting)**.

Task 2. Match the advanced phrases with their functions. (5 × 1 point)

1. *My research primarily focuses on…*
2. *I am currently engaged in…*
3. *One of my long-term objectives is…*
4. *The significance of my work lies in…*
5. *I collaborate with colleagues to…*

a) Presenting current activities
b) Expressing long-term goals
c) Introducing research focus
d) Explaining importance
e) Describing cooperation

Part II. Reading Comprehension (15 points)

Task 3. Read the text and complete the tasks.

Text:
In today's global academic environment, self-presentation has evolved into a sophisticated skill that requires more than just a list of degrees or professional experiences. A strong academic introduction should not only describe one's background but also highlight research interests, current projects, and future goals. Moreover, it should be adapted to the audience: when presenting to experts, detailed methodology may be emphasized; when addressing a broader audience, clarity and accessibility are essential. Finally, self-presentation is a dynamic process that combines verbal, non-verbal, and written communication strategies, all of which contribute to building a professional identity in the academic community.

Questions (5 × 2 points):

1. What elements should a strong academic introduction include?
2. How should self-presentation differ when addressing experts versus a broader audience?
3. Why is self-presentation described as a dynamic process?
4. What role does non-verbal communication play in academic self-presentation?
5. Write a **3-sentence summary** of the text. (5 points)

Part III. Writing (15 points)

Task 4. Write a formal academic self-presentation (150–180 words) as if you were applying for a research internship abroad. Your self-presentation should include:

- Introduction (name, academic status).
- Detailed academic background (courses, degrees, specialization).
- Research experience (projects, publications, collaborations).
- Future academic and career objectives.
- A concluding statement highlighting your professional motivation.

Evaluation: accuracy, complexity of vocabulary, coherence, formal style.

Part IV. Speaking (10 points)

Task 5. Prepare a 2–3 minute oral self-presentation (outline only, written). Imagine you are a candidate at an international mathematics summer school. Include in your outline:

- A formal greeting and introduction.
- Your academic specialization and specific research focus.
- A major achievement or project you are proud of.
- Future academic or professional plans.
- A strong closing sentence.

(You will be assessed on clarity, logical flow, and academic register.)

Part V. Grammar in Context (10 points)

Task 6. Rewrite the sentences using **reported speech**. (5 × 2 points)

1. “I am currently working on number theory,” she said.
2. “We will present our findings next month,” the professor explained.
3. “My main research interest is applied statistics,” the student noted.
4. “This project requires interdisciplinary cooperation,” the supervisor emphasized.
5. “I have already completed a publication on this topic,” he added.

Variant 3

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most appropriate academic word or phrase to complete each sentence. (5 × 1 point)

1. The study clearly _____ the relationship between theoretical models and practical applications.
   a) shows
   b) demonstrates
   c) tells
   d) proves
2. In academic writing, it is essential to provide evidence in order to _____ an argument.
   a) support
   b) tell
   c) assume
   d) say
3. The author provides a detailed _____ of the methodology applied in the research.
   a) explanation
   b) speaking
   c) saying
   d) story
4. Students are encouraged to _____ critically on the strengths and weaknesses of existing literature.
   a) think
   b) reflect
   c) imagine
   d) memorize
5. When citing sources, one must always follow the appropriate academic _____.
   a) style
   b) look
   c) format
   d) model

Task 2. Match the advanced academic phrases with their functions. (5 × 1 point)

1. *It is widely acknowledged that…*
2. *The findings suggest a correlation between…*
3. *Further research is required to…*
4. *This paper seeks to address…*
5. *One limitation of this study is…*

a) Introducing research aims
b) Referring to general academic consensus
c) Pointing out limitations
d) Indicating the need for future study
e) Interpreting research results

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Academic language proficiency is more than vocabulary knowledge; it encompasses the ability to use complex sentence structures, precise terminology, and coherent argumentation in both spoken and written contexts. In mathematics and related sciences, academic language allows scholars to present definitions, articulate logical reasoning, and evaluate evidence critically. Unlike everyday communication, academic discourse requires objectivity, clarity, and conciseness. Moreover, proficiency in academic English is essential for engaging with international literature, participating in scholarly discussions, and publishing research results. Developing these skills is a gradual process, requiring exposure to authentic materials, practice in critical reading, and regular opportunities for writing and oral presentation.

Questions (5 × 2 points):

1. How does academic language proficiency differ from everyday communication?
2. Why is academic English essential in mathematics and sciences?
3. What are the main qualities of academic discourse?
4. What methods are suggested for developing academic language proficiency?
5. Write a **3–4 sentence summary** of the text. (5 points)

Part III. Writing (15 points)

Task 4. Write a short **academic reflection** (180–200 words) on the following topic:
"The role of academic English proficiency in the career development of future mathematicians."

Your reflection should:

- Introduce the topic clearly.
- Explain why academic language is crucial for mathematicians (e.g., conferences, publishing, collaboration).
- Provide at least two examples or arguments supported with reasoning.
- End with a concluding remark emphasizing long-term benefits.

Criteria: complexity of vocabulary, coherence, formal style, critical reflection.

Part IV. Speaking (10 points)

Task 5. Prepare an outline (not a full text) for a 2–3 minute oral presentation on the topic:
"Challenges and strategies for mastering academic English as a mathematics student."

Your outline should include:

- Opening (formal greeting + introduction of topic).
- Identification of main challenges (e.g., technical terminology, grammar complexity, speaking confidence).
- Suggested strategies (e.g., extensive reading, peer discussions, presentation practice).
- A conclusion that emphasizes the importance of persistence and practice.

(You will be assessed on clarity, logical structure, and academic register.)

Part V. Grammar in Context (10 points)

Task 6. Rewrite the sentences using **passive voice**, which is typical in academic writing. (5 × 2 points)

1. Researchers conducted the study in three different universities.
2. The committee will evaluate the project results next week.
3. The authors have presented several innovative solutions.
4. We used statistical software to analyze the data.
5. The students are discussing the article in class.

Variant 4

Part I. Vocabulary and Terminology (10 points)

1. Match the advanced academic/scientific terms with their definitions.

a) approximation
b) hypothesis
c) correlation
d) derivation
e) verification

1. Establishing whether a statement, formula, or result is valid.
2. A reasoned assumption that can be tested scientifically.
3. The process of obtaining a result step by step from given principles.
4. The degree to which two variables are related.
5. A value or expression that is close to, but not exactly, the true result.

Part II. Reading Comprehension (20 points)

Read the short adapted excerpt and answer the questions:

Text:
"Scientific communication in mathematics and related fields relies heavily on precision and clarity. Unlike other sciences, mathematics demands strict adherence to logical consistency, while scientific communication often requires balancing formal rigor with accessibility to a wider audience. In recent decades, digital platforms and preprint archives have accelerated the dissemination of new results, changing the culture of peer review and collaboration."

Questions:

1. What is emphasized as unique about mathematical communication compared to other sciences?
2. What challenges arise in balancing rigor and accessibility?
3. How have digital platforms transformed scientific communication?
4. Suggest one advantage and one possible drawback of online preprint archives.

Part III. Grammar in Context (15 points)

Complete the sentences using the correct academic structures (passive voice, relative clauses, complex sentence connectors).

1. The theorem, _____ was first formulated in the 19th century, has been applied in numerous fields.
2. The data _____ collected during the experiment were analyzed statistically.
3. Although the model seems convincing, _____.
4. The hypothesis was rejected _____.

Part IV. Writing Task (10 points)

Write a **short academic abstract (150–180 words)** for a hypothetical research article in mathematics. Your abstract must include:

- Background/context (why the problem is important)
- Aim of the research
- Methods (without formulas, but with formal academic language)
- Main findings (imagined but plausible)
- Potential applications

Assessment criteria: coherence, accuracy, academic vocabulary, complexity of structures.

Part V. Oral/Discussion Simulation (10 points)

Prepare a **3–4 minute oral mini-presentation** (outline only, not a full text) on one of the following topics:

1. The role of precision in mathematical proofs vs. applied sciences.
2. The impact of technology (software, AI, preprint servers) on mathematical collaboration.
3. Challenges of explaining complex mathematical concepts to non-specialists.

Your outline should include:

- Introduction (hook + context)
- 2–3 main arguments with examples
- Conclusion (summary + possible future perspectives)

Variant 5

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most appropriate academic word or phrase to complete each sentence. (5 × 1 point = 5 points)

1. The study clearly _____ the relationship between theoretical models and practical applications.
   a) shows b) demonstrates c) tells d) proves
2. In academic writing, it is essential to provide evidence in order to _____ an argument.
   a) support b) tell c) assume d) say
3. The author provides a detailed _____ of the methodology applied in the research.
   a) explanation b) speaking c) saying d) story
4. Students are encouraged to _____ critically on the strengths and weaknesses of existing literature.
   a) think b) reflect c) imagine d) memorize
5. When citing sources, one must always follow the appropriate academic _____.
   a) style b) look c) format d) model

Task 2. Match the advanced academic phrases with their functions. (5 × 1 point = 5 points)

1. It is widely acknowledged that…
2. The findings suggest a correlation between…
3. Further research is required to…
4. This paper seeks to address…
5. One limitation of this study is…

a) Introducing research aims
b) Referring to general academic consensus
c) Pointing out limitations
d) Indicating the need for future study
e) Interpreting research results

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Academic language proficiency is more than vocabulary knowledge; it encompasses the ability to use complex sentence structures, precise terminology, and coherent argumentation in both spoken and written contexts. In mathematics and related sciences, academic language allows scholars to present definitions, articulate logical reasoning, and evaluate evidence critically. Unlike everyday communication, academic discourse requires objectivity, clarity, and conciseness. Moreover, proficiency in academic English is essential for engaging with international literature, participating in scholarly discussions, and publishing research results. Developing these skills is a gradual process, requiring exposure to authentic materials, practice in critical reading, and regular opportunities for writing and oral presentation.

Questions (5 × 2 points = 10 points):

1. How does academic language proficiency differ from everyday communication?
2. Why is academic English essential in mathematics and sciences?
3. What are the main qualities of academic discourse?
4. What methods are suggested for developing academic language proficiency?
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Academic Reflection Essay (180–200 words)

Topic: *"The role of academic English proficiency in the career development of future mathematicians."*

Your reflection should:

- Introduce the topic clearly.
- Explain why academic language is crucial for mathematicians (e.g., conferences, publishing, collaboration).
- Provide at least two examples or arguments supported with reasoning.
- End with a concluding remark emphasizing long-term benefits.

Criteria: complexity of vocabulary, coherence, formal style, critical reflection.

(Maximum: 15 points)

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Challenges and strategies for mastering academic English as a mathematics student."*

Your outline should include:

- **Opening:** formal greeting + introduction of topic
- **Challenges:** technical terminology, grammar complexity, speaking confidence
- **Strategies:** extensive reading, peer discussions, presentation practice
- **Conclusion:** persistence and practice as key to success

Assessment: clarity, logical structure, academic register.
(Maximum: 10 points)

Part V. Grammar in Context (10 points)

Task 6. Rewrite the sentences using passive voice (5 × 2 points = 10 points)

1. Researchers conducted the study in three different universities.
2. The committee will evaluate the project results next week.
3. The authors have presented several innovative solutions.
4. We used statistical software to analyze the data.
5. The students are discussing the article in class.

Variant 6

Part I. Vocabulary and Terminology (10 points)

Task 1. Complete the sentences with the most precise academic term. (5 × 1 point = 5 points)

1. A well-structured research paper must include a clear _____ that defines its scope and objectives.
   a) hypothesis b) title c) discussion d) summary
2. In scientific communication, the reliability of data is often verified through _____ procedures.
   a) experimental b) narrative c) descriptive d) storytelling
3. Scholars are encouraged to provide _____ citations to support their claims.
   a) accurate b) approximate c) informal d) casual
4. The process of interpreting results and drawing conclusions is called _____.
   a) analysis b) assumption c) imagination d) explanation
5. A critical evaluation of previous studies helps identify existing _____ in the literature.
   a) gaps b) summaries c) anecdotes d) stories

Task 2. Match the phrases to their functions in scientific writing. (5 × 1 point = 5 points)

1. "The data indicate a significant trend toward…"
2. "This investigation aims to examine…"
3. "An important consideration is the potential bias in…"
4. "Further studies are necessary to determine…"
5. "It is generally accepted that…"

a) Highlight limitations
b) Present research objectives
c) Report findings
d) Refer to general academic consensus
e) Suggest future research directions

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Scientific literacy is the ability to understand, interpret, and critically evaluate information from various scientific sources. In mathematics and related fields, it involves not only comprehension of technical terminology but also the capacity to identify assumptions, evaluate methods, and assess conclusions. A scientifically literate individual can connect evidence to theoretical models, distinguish between correlation and causation, and communicate findings clearly. Developing these skills requires regular exposure to authentic scientific texts, including research articles, technical reports, and review papers, along with active engagement in discussion and reflective practices.

Questions (5 × 2 points = 10 points):

1. Define scientific literacy in the context of mathematics and related sciences.
2. What are the key skills involved in evaluating scientific texts?
3. Why is it important to distinguish correlation from causation?

4. Suggest methods for improving scientific literacy.
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Short Scientific Commentary (180–200 words)

Topic: *"The importance of scientific literacy for mathematics students in the 21st century."*

Your commentary should:

- Introduce the topic clearly.
- Explain the relevance of scientific literacy for understanding research and solving complex problems.
- Provide at least two specific examples or arguments supported by reasoning.
- Conclude with practical implications for students' academic and professional development.

Criteria: academic style, coherence, critical reasoning, vocabulary complexity.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Key strategies for enhancing scientific literacy as a mathematics student."*

Your outline should include:

- **Opening:** formal greeting + topic introduction
- **Challenges:** technical terminology, evaluating complex data, interpreting evidence
- **Strategies:** reading scientific papers, discussing findings with peers, summarizing results
- **Conclusion:** emphasize persistence, critical thinking, and continuous learning

Assessment: clarity, logical structure, academic register.

Part V. Grammar in Context (10 points)

Task 6. Rewrite the sentences using formal academic structures (passive voice and nominalization). (5 × 2 points = 10 points)

1. The research team analyzed multiple datasets to detect patterns.
2. The professor will review all student reports by next week.
3. Students conducted experiments and recorded observations.
4. We designed the survey to examine specific trends.
5. The authors discuss the implications of their findings in the conclusion.

Variant 7

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most precise academic term to complete each sentence. (5 × 1 point = 5 points)

1. A histogram is used to represent the _____ of a dataset visually.
   a) frequency b) calculation c) explanation d) assumption
2. The line graph clearly shows a _____ in the data over time.
   a) pattern b) story c) narrative d) hypothesis
3. Pie charts are most suitable for displaying the _____ of a whole.
   a) proportion b) equation c) solution d) sample
4. A scatter plot is used to identify potential _____ between two variables.
   a) correlations b) conclusions c) formulas d) paragraphs
5. When presenting data, it is important to provide a clear _____ to guide interpretation.
   a) legend b) story c) discussion d) paragraph

Task 2. Match the phrases with their functions in describing visual data. (5 × 1 point = 5 points)

1. "The chart indicates a significant increase in values over the last decade."
2. "A comparison of these variables suggests a possible relationship."
3. "The pie chart illustrates the proportion of each category clearly."
4. "Anomalies can be observed in the dataset around month five."
5. "The graph was constructed using data from reliable sources."

a) Pointing out unusual data points
b) Presenting trends
c) Explaining data sources
d) Indicating proportions
e) Suggesting relationships

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Visual representations, such as graphs, tables, and charts, are fundamental tools in mathematics and science. They allow for quick comprehension of complex data, facilitate comparison across categories, and support evidence-based conclusions. Accurate interpretation requires understanding the type of visualization used, recognizing patterns, assessing outliers, and relating the data to the underlying context. Scholars must also communicate their findings clearly, describing trends, highlighting anomalies, and explaining the significance of their results. Proficiency in reading visual data enhances analytical reasoning and supports decision-making in research and applied fields.

Questions (5 × 2 points = 10 points):

1. What are the main functions of visual data representations in mathematics and science?
2. Why is recognizing outliers important when analyzing graphs or charts?
3. How can visual data support evidence-based conclusions?
4. Suggest methods to improve proficiency in interpreting visual data.
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Short Analytical Report (180–200 words)

Topic: *"How visual data representations enhance understanding in mathematical research."*

Your report should:

- Introduce the importance of visual data in mathematics.
- Explain the advantages of using graphs, tables, and charts.
- Include at least two specific examples of how data visualization clarifies trends or relationships.
- Conclude with practical recommendations for effectively presenting data in research.

Criteria: academic style, coherence, critical reasoning, vocabulary complexity.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Interpreting and presenting visual data effectively as a mathematics student."*

Your outline should include:

- **Opening:** formal greeting + topic introduction
- **Key elements:** understanding graph types, identifying trends, detecting anomalies
- **Techniques:** labeling, legends, comparative analysis, concise descriptions
- **Conclusion:** emphasize clarity, accuracy, and logical flow

Assessment: clarity, logical structure, academic register.

Part V. Grammar in Context (10 points)

Task 6. Rewrite the sentences using formal academic structures (passive voice and nominalization). (5 × 2 points = 10 points)

1. Researchers analyzed the data using multiple visualization methods.
2. The professor will explain the chart results during the lecture.
3. Students constructed a bar graph to compare categories.
4. We presented the findings to highlight the key patterns.
5. The authors discuss trends and anomalies in the dataset.

Variant 8

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most precise term to complete each sentence. (5 × 1 point = 5 points)

1. Reliable online sources must be _____ to ensure the credibility of research.
   a) verified b) assumed c) guessed d) ignored
2. A _____ is an organized collection of digital data that can be analyzed.
   a) database b) notebook c) textbook d) sketch
3. Using academic search engines allows students to _____ scholarly articles efficiently.
   a) access b) avoid c) ignore d) fabricate
4. Digital research requires knowledge of copyright and _____ when using information from the Internet.
   a) plagiarism b) translation c) grammar d) design
5. A literature review helps to identify gaps and _____ in current research.
   a) trends b) jokes c) errors d) paragraphs

Task 2. Match the phrases with their typical functions in digital research. (5 × 1 point = 5 points)

1. "The dataset was obtained from a reputable online repository."
2. "A systematic search was conducted in multiple digital libraries."
3. "Citing sources properly is crucial to avoid ethical violations."
4. "The software was used to visualize statistical data effectively."
5. "The findings align with previous research and provide new insights."

a) Ensuring ethical research practices
b) Highlighting consistency with previous studies
c) Data collection and source description
d) Analytical tools usage
e) Search strategy description

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Digital research competence is an essential skill for modern mathematicians and scientists. It involves the ability to efficiently locate, evaluate, and synthesize information from online resources while adhering to ethical and copyright standards. Mastery of digital tools, databases, and academic search engines enhances the quality of research, enabling scholars to identify relevant literature, collect accurate datasets, and visualize findings. Additionally, students must develop critical thinking skills to assess source credibility, detect biases, and integrate digital data into coherent arguments. Continuous practice and guided instruction in digital research methods are crucial for building lifelong research proficiency.

Questions (5 × 2 points = 10 points)

1. What are the key components of digital research competence?
2. Why is ethical conduct important when using online resources?
3. How do digital tools improve the efficiency and quality of research?

4. Suggest strategies to assess the reliability of digital sources.
5. Summarize the text in 3–4 sentences. (5 points)

Part III. Writing (15 points)

Task 4. Short Academic Report (180–200 words)

Topic: *"The role of digital competence in modern mathematical research."*

Your report should:

- Introduce the concept of digital research competence.
- Explain its significance for mathematicians and students.
- Provide at least two examples of digital tools or strategies used in research.
- Conclude with recommendations for improving digital research skills.

Criteria: coherence, academic style, vocabulary complexity, critical reasoning.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Effective strategies for digital research in mathematics."*

Your outline should include:

- **Opening:** formal greeting + introduction of topic
- **Key points:** evaluating sources, using databases, organizing data
- **Techniques:** filtering information, referencing, avoiding plagiarism
- **Conclusion:** emphasize accuracy, critical assessment, and digital literacy

Assessment: clarity, logical structure, academic register.

Part V. Grammar in Context (10 points)

Task 6. Rewrite the sentences using academic-style formal structures (passive voice or nominalization). (5 × 2 points = 10 points)

1. Students downloaded datasets from multiple online repositories.
2. The teacher will explain how to cite electronic sources properly.
3. Researchers analyzed the data using specialized software.
4. We wrote a report summarizing the key findings from digital resources.
5. Authors discuss potential limitations in the methodology

Variant 9

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most suitable academic word or phrase to complete each sentence. (5 × 1 point = 5 points)

1. In academic writing, it is important to provide _____ evidence to support your claims.
   a) strong b) relevant c) fictional d) casual
2. A well-structured introduction should clearly _____ the research question and objectives.
   a) state b) hide c) guess d) imply
3. Scholars are encouraged to adopt a _____ style, avoiding informal expressions and colloquialisms.
   a) casual b) formal c) playful d) narrative
4. Critical analysis involves evaluating strengths, weaknesses, and potential _____ in the literature.
   a) errors b) trends c) gaps d) stories
5. Paraphrasing allows researchers to present others' ideas in their own words while avoiding _____.
   a) plagiarism b) analysis c) summarization d) citation

Task 2. Match academic phrases with their functions. (5 × 1 point = 5 points)

1. "This study aims to investigate…"
2. "According to previous research…"
3. "The findings indicate a significant correlation between…"
4. "Further research is needed to explore…"
5. "One limitation of this study is…"

a) Pointing out research gaps
b) Presenting research objectives
c) Highlighting limitations
d) Referring to prior studies
e) Interpreting research results

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Effective academic writing requires not only a solid command of grammar and vocabulary but also the ability to structure ideas logically and coherently. Clear thesis statements, well-organized paragraphs, and transitions between ideas are essential for communicating complex arguments. Writers must also critically evaluate sources, synthesize information, and maintain objectivity. Moreover, academic writing demands precision, conciseness, and the avoidance of ambiguity. Continuous practice, peer feedback, and revision are key strategies for improving writing skills and producing high-quality academic texts.

Questions (5 × 2 points = 10 points)

1. What are the main features of effective academic writing?

2. Why is logical structuring of ideas important in academic texts?
3. What strategies help in critically evaluating sources?
4. How can ambiguity be avoided in academic writing?
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Academic Paragraph Writing (180–200 words)

Topic: *"The importance of clarity and structure in academic writing for mathematics students."*

Your paragraph should:

- Introduce the topic clearly.
- Explain the role of clear organization and logical argumentation.
- Provide at least two examples of strategies to improve academic writing.
- Conclude with the benefits of mastering academic writing skills.

Assessment: vocabulary range, coherence, formal academic style, critical reasoning.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Techniques for improving academic writing skills in mathematics."*

Your outline should include:

- **Opening:** formal greeting + topic introduction
- **Key points:** structuring paragraphs, clarity of arguments, use of evidence
- **Practical techniques:** peer review, drafting, revising, using digital tools
- **Conclusion:** emphasize long-term benefits and continuous practice

Assessment: clarity, logical structure, use of academic register.

Part V. Grammar in Context (10 points)

Task 6. Rewrite the following sentences using formal academic structures (passive voice or nominalization). (5 × 2 points = 10 points)

1. Students submitted their research reports online.
2. The professor will provide feedback on the assignments next week.
3. Researchers conducted experiments to test the new hypothesis.
4. We analyzed the data and interpreted the results.
5. Authors discuss their methodology in the introduction section.

Variant 10

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most appropriate academic word or phrase to complete each sentence. (5 × 1 point = 5 points)

1. In reports, it is important to provide a clear _____ of the methodology used.
   a) explanation b) story c) tale d) conversation
2. Authors must always include a _____ section that summarizes the main findings.
   a) conclusion b) gossip c) introduction d) note
3. When presenting results, researchers should distinguish between facts and _____.
   a) evidence b) opinion c) data d) observation
4. Effective reporting requires the ability to _____ complex information concisely.
   a) summarize b) repeat c) tell d) imagine
5. Visual aids such as tables and graphs help to _____ the presented data.
   a) obscure b) illustrate c) confuse d) hide

Task 2. Match academic phrases with their functions. (5 × 1 point = 5 points)

1. "The results indicate a statistically significant effect…"
2. "This section outlines the research design and methodology."
3. "It is important to note the limitations of this study."
4. "Future work should explore additional variables."
5. "The analysis supports the initial hypothesis."

a) Presenting research outcomes
b) Explaining methods
c) Discussing limitations
d) Suggesting future research
e) Confirming hypotheses

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Academic reporting is a crucial skill in mathematics and related sciences. Reports must be structured logically, beginning with a clear introduction, followed by methodology, results, and conclusions. Each section has a distinct purpose: the introduction sets the context and objectives, the methodology explains the approach, results present the findings, and the conclusion interprets the outcomes and provides recommendations. Accurate presentation of data, use of visual aids, and avoidance of ambiguity are essential. Furthermore, clarity, coherence, and objectivity distinguish high-quality academic reports from informal writing.

Questions (5 × 2 points = 10 points)

1. What are the main sections of an academic report, and what is their purpose?
2. Why is logical structure important in reporting?
3. How do visual aids contribute to academic reporting?
4. What distinguishes high-quality reports from informal writing?

5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Report Writing (180–200 words)

Topic: *"Presenting experimental results clearly and objectively in academic reports."*

Your report should:

- Introduce the study or experiment clearly.
- Describe the methodology concisely.
- Present key results, including at least one example of a visual representation (e.g., table, chart).
- Discuss the implications of the findings.

Assessment: vocabulary complexity, coherence, formal style, logical presentation of information.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Best practices for presenting research findings in mathematics."*

Your outline should include:

- **Opening:** formal greeting + introduction of topic
- **Key points:** structure of the report, clarity in presenting results, objective interpretation
- **Practical tips:** using visuals effectively, summarizing key information, avoiding ambiguity
- **Conclusion:** emphasize accuracy, coherence, and readability

Assessment: clarity, organization, academic register.

Part V. Grammar and Style in Context (10 points)

Task 6. Rewrite the following sentences to improve academic style (use passive voice, nominalization, or formal expressions). (5 × 2 points = 10 points)

1. The researchers collected data from 200 participants.
2. We analyzed the results and found a significant trend.
3. Students completed surveys about their study habits.
4. The professor will review the submitted reports next week.
5. Authors discuss the limitations of their study in the final section.

Variant 11

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most precise academic word or phrase to complete each sentence. (5 × 1 point = 5 points)

1. The report proposes a viable _____ to the computational bottleneck in the algorithm.
   a) conclusion b) solution c) assumption d) speculation
2. Researchers must carefully _____ potential obstacles before designing an experiment.
   a) identify b) ignore c) assume d) discuss
3. The paper introduces a novel method aimed at _____ the accuracy of predictive models.
   a) enhancing b) reducing c) ignoring d) avoiding
4. A critical step in problem-solving is to _____ the underlying causes of observed discrepancies.
   a) investigate b) repeat c) memorize d) observe
5. When proposing solutions, it is essential to provide clear _____ supporting the approach.
   a) justification b) narrative c) gossip d) description

Task 2. Match the academic phrases with their function. (5 × 1 point = 5 points)

1. "One major challenge encountered during the study was…"
2. "The proposed solution involves implementing an iterative method."
3. "The results indicate that the new approach significantly reduces errors."
4. "Future research should explore alternative optimization strategies."
5. "The primary limitation of this study is the small sample size."

a) Presenting challenges
b) Proposing solutions
c) Reporting outcomes
d) Suggesting further work
e) Discussing limitations

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Advanced problem–solution discourse is a key component of mathematical communication. A well-structured problem–solution report begins with a clear statement of the problem, including its context and significance. The following section outlines the methods applied to address the problem, and identifies obstacles encountered. The proposed solutions are then described, with evidence supporting their effectiveness. Finally, the discussion interprets results, addresses limitations, and suggests directions for future work. Mastery of this discourse requires the ability to articulate problems precisely, evaluate solutions critically, and justify decisions objectively.

Questions (5 × 2 points = 10 points)

1. What are the main sections of a problem–solution report, and what is the function of each?
2. Why is clear articulation of the problem essential?
3. How should proposed solutions be presented and justified?

4. What is the role of the discussion section?
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Problem–Solution Report (180–200 words)

Topic: *"Addressing a complex mathematical or computational problem with a structured solution approach."*

Your report should:

- Introduce the problem clearly, providing context and relevance.
- Explain the method used to analyze the problem.
- Present the solution, providing justification and evidence.
- Discuss potential limitations and future improvements.

Assessment: vocabulary complexity, coherence, formal style, critical evaluation.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Presenting a mathematical problem and its solution to peers."*

Your outline should include:

- **Opening:** formal greeting + introduction of topic
- **Problem identification:** description of the issue and its importance
- **Proposed solution:** approach, reasoning, expected outcomes
- **Challenges and limitations:** discuss obstacles and constraints
- **Conclusion:** summarize key points and emphasize applicability

Assessment: clarity, logical flow, academic register.

Part V. Grammar and Style in Context (10 points)

Task 6. Rewrite the sentences to enhance formal academic style (5 × 2 points = 10 points)

1. We found that the algorithm produced inconsistent results.
2. The team will test the new method next semester.
3. Students are using simulations to explore solution strategies.
4. The researchers discussed potential limitations during the meeting.
5. The software developers updated the program to fix errors.

Variant 12

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most precise academic or professional term to complete each sentence. (5 × 1 point = 5 points)

1. During team meetings, it is important to _____ your ideas clearly and logically.
   a) present b) say c) tell d) mention
2. Effective professional communication often requires active _____ of colleagues' contributions.
   a) listening b) speaking c) reading d) writing
3. When reporting results, one should use _____ language appropriate for a formal audience.
   a) professional b) casual c) informal d) everyday
4. Clear communication involves avoiding ambiguity and ensuring that all statements are _____.
   a) precise b) vague c) general d) random
5. Written professional documents must be structured, coherent, and supported by appropriate _____.
   a) evidence b) imagination c) opinion d) storytelling

Task 2. Match the phrases with their function in professional communication. (5 × 1 point = 5 points)

1. "I would like to summarize the key points of our discussion."
2. "Could you clarify your reasoning behind this conclusion?"
3. "It is widely agreed among researchers that…"
4. "As a result of the analysis, the team recommends…"
5. "One limitation of our approach is the limited dataset available."

a) Presenting recommendations
b) Asking for clarification
c) Summarizing discussion
d) Indicating limitations
e) Referring to general consensus

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Professional communication in mathematics and related sciences requires precision, clarity, and adaptability. Scholars must convey complex ideas both orally and in writing, adjusting their language to the audience. Professional discourse involves presenting findings, discussing methods, evaluating alternatives, and justifying conclusions. Effective communication also entails active listening, asking clarifying questions, and engaging in constructive debate. Mastery of these skills improves collaboration, promotes knowledge sharing, and enhances the credibility of researchers within the scientific community.

Questions (5 × 2 points = 10 points)

1. What are the key components of professional communication in mathematics?

2. Why is audience adaptation important in professional discourse?
3. List three practices that enhance communication effectiveness.
4. How does professional communication contribute to collaboration?
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Professional Email (180–200 words)

Scenario: You are preparing to collaborate with an international research team. Write a formal email to introduce yourself, summarize your role and research interests, and propose a meeting to discuss collaboration.

Your email should:

- Use a professional salutation and closing
- Clearly present your background and area of expertise
- Indicate interest in collaboration and suggest next steps
- Demonstrate formal tone, coherence, and clarity

Assessment: vocabulary complexity, formal style, clarity, structure, and appropriateness for professional context.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Outline (2–3 minutes)

Topic: *"Communicating complex mathematical ideas to a non-specialist audience."*

Your outline should include:

- **Opening:** formal greeting and introduction of topic
- **Main points:** key ideas, methods, or findings explained clearly
- **Strategies:** how to simplify complex terminology without losing meaning
- **Conclusion:** emphasize the importance of clear communication for outreach and collaboration

Assessment: clarity, logical organization, academic register, and suitability for the audience.

Part V. Grammar and Style in Context (10 points)

Task 6. Rewrite the sentences using formal and precise professional language. (5 × 2 points = 10 points)

1. I think the method works well in this experiment.
2. We found some mistakes in the calculations.
3. The team talked about the new solution in the meeting.
4. Everyone should check their results before submitting them.
5. This report shows what we did in the project.

Variant 13

Part I. Vocabulary and Terminology (10 points)

Task 1. Choose the most precise academic word or phrase to complete each sentence. (5 × 1 point = 5 points)

1. A successful presentation requires a clear _____ of the topic.
   a) explanation b) telling c) narration d) speaking
2. The presenter should engage the audience by using effective _____ techniques.
   a) rhetorical b) casual c) informal d) narrative
3. Visual aids such as slides and charts help to _____ complex information.
   a) clarify b) confuse c) obscure d) repeat
4. Maintaining good _____ with the audience enhances attention and understanding.
   a) rapport b) distance c) confusion d) distraction
5. A concise conclusion should _____ the main findings and recommendations.
   a) summarize b) narrate c) speculate d) prolong

Task 2. Match the phrases with their function in academic presentations. (5 × 1 point = 5 points)

1. "Let us begin by outlining the objectives of this study."
2. "In conclusion, these results suggest that…"
3. "Could you clarify what you meant by that statement?"
4. "This section will discuss the methodology employed."
5. "According to recent studies, there is a strong correlation between…"

a) Introducing objectives
b) Asking for clarification
c) Presenting methodology
d) Drawing conclusions
e) Referring to research findings

Part II. Reading Comprehension (15 points)

Task 3. Read the text and answer the questions.

Text:
Academic presentation skills are essential for mathematicians and scientists to communicate complex ideas effectively. Presentations can be oral, visual, or a combination of both, and require careful planning, logical organization, and audience awareness. Key components include clear articulation of objectives, explanation of methods, presentation of results, and drawing conclusions. Visual aids, such as slides, charts, and diagrams, enhance comprehension. Successful presenters anticipate questions, address them confidently, and engage the audience through interaction. Mastering these skills increases credibility, promotes knowledge dissemination, and supports professional development.

Questions (5 × 2 points = 10 points)

1. What are the main components of an academic presentation?
2. How do visual aids support audience understanding?
3. Why is audience engagement important in presentations?

4. How can presenters handle questions effectively?
5. Write a 3–4 sentence summary of the text. (5 points)

Part III. Writing (15 points)

Task 4. Presentation Outline (180–200 words)

Scenario: You are preparing to present a research topic on "The Role of Mathematical Modeling in Modern Science."

Your outline should:

- Include a title and clear objectives
- Describe methods and approaches clearly
- Present results or main points logically
- Include a conclusion highlighting significance and implications
- Suggest potential questions the audience might ask

Assessment: coherence, structure, professional vocabulary, logical flow.

Part IV. Speaking (10 points)

Task 5. Oral Presentation Simulation (2–3 minutes)

Topic: *"Communicating Complex Scientific Concepts to a Mixed Audience."*

Your oral presentation should include:

- Formal greeting and topic introduction
- Explanation of key concepts in simple, understandable language
- Examples to illustrate abstract ideas
- A brief conclusion emphasizing importance and relevance

Assessment: clarity, logical organization, academic register, audience awareness.

Part V. Grammar and Style in Context (10 points)

Task 6. Rewrite the sentences to improve formality and coherence for an academic presentation. (5 × 2 points = 10 points)

1. I will talk about the results we got.
2. The team did some experiments last month.
3. This slide shows what we found.
4. We hope this will help explain the method.
5. Please ask if you have any questions.

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Посібник з англійської мови для математиків призначений для студентів IV курсу Закарпатського угорського інституту імені Ференца Ракоці спеціальності 014 Середня освіта (Математика) заочної форми навчання з метою організації контрольної роботи з курсу "Іноземна мова за професійним спрямуванням".

Матеріал призначений для використання як навчально-методичний посібник з дисципліни "Іноземна мова за професійним спрямуванням ".

Затверджено до використання у навчальному процесі
на засіданні кафедри математики та інформатики
(протокол № 10 від «23» червня 2025 року)

Розглянуто та рекомендовано Радою із забезпечення якості вищої освіти
Закарпатського угорського інституту імені Ференца Ракоці II
(протокол №7 від 26 серпня 2025 року)

Рекомендовано до видання у електронній формі (PDF)
рішенням Вченої ради Закарпатського угорського інституту імені Ференца Ракоці II
(протокол №8 від 28 серпня 2025 року)

Підготовлено до видання у електронній формі (PDF) кафедрою математики та інформатики з Видавничим відділом Закарпатського угорського інституту імені Ференца Ракоці II