PRACTICE 1
WORKING WITH THE FOREIGN SOURCES

PART 1

✍ *Task 1 Choose 3 terms for each class according to the classification from the theory: general scientific terms; cross-industry terms; industry-specific terms. Give short explanation to each term* (ignore the highlighting of some terms)

Linear function, Graph, Point, Coefficient, Slop, Property, Table, Variable, Straight line, Lecture, **Cartesian coordinate system**, Coordinates, Origin of coordinates, x-axis, y-axis, Scale, Equals, Plus, Minus, Positive number, Negative number, Positive direction, Algorithm, Infinity, Domain of definition, Range of function, Greater than, Less than, Greater than or equal to, Less than or equal to, Right, False, Increase, Decrease, Acute angle, Obtuse angle, Right angle, Abscissa, Ordinate, Parallel, Perpendicular, Intersect, **Intersection point**, Plane, Satisfy, Substitute, Coincide, System of equations, General solution, Particular solution, Arbitrary value, Analytical, Graphical, **Substitution method**, Method of addition, Empty set, Unique solution, **Partial order structure**, **Complex number field**, Graphic editor, Working on the Internet, **Information search**, Toolbox, **Safety precautions**, Laboratory work, Environment, Common, **Computer systems programming**, **Software engineering**, **Network support and management**, **Database design and management**, **System analysis and control**, **Web page design**

☝ *Example to the task 1.*

Mathematics lesson: A structured educational session where students learn mathematical theories as set of mathematical sentences – definitions, theorems, axioms, and there applications.

Safety measures: Precautions and procedures followed to ensure a safe environment, especially during experiments, to prevent accidents and injuries.

Environment: The surrounding natural world, including air, water, soil, and living organisms, affecting and being affected by human activities.

✍ *Task 2 Fill numerals in the tables and read them correctly (Table 3, table 4). Pay attention on the difficult to pronounce numerals in English. Write transcriptions (Table 5)*

Table 3 – Cardinal (quantitative) numbers

Symbol	Word (or combination of words)
101	
407	
4,286	
2,625,310	

5,300,050	
2²	2 variants
2³	2 variants

Table 4 – Ordinal numbers

In figures	In words	In figures	In words
7th		17th	
13th		30th	
19th		90th	
100th		101st	

Remark. Cardinal numbers should be written as words at the beginning of a sentence. If you need to use numbers, change the sentence structure. For example:
- *Fifty-six workers were fired yesterday.*
- *Yesterday 56 workers were fired.*

Ordinal numerals, as a rule, are used as adjectives and come before nouns. An ordinal number is usually preceded by the article "the". They are written in words if the number is up to ten. See also Application 2.

Table 5 – Difficult to pronounce numerals

Cardinal [transcription]	Ordinal [transcription]	Cardinal [transcription]	Ordinal [transcription]
Two []	Second []	50 []	50th []
5 []	5th []	99 []	99th []
9 []	9th []	20 []	20th []
15 []	15th []	17 []	17th []
33 []	33d []	40 []	40th[]
22 []	22d []	44 []	44th []

✍ *Task 3 Translate the highlighted terms from task 1. What can they be called? Explain the features of their translation. Make sentences using selected terms (you can use the techniques from video at the link https://youtu.be/fyVBYA0CKr0?si=BdCm9sVTchr6E5a0)*

✍ *Task 4 Fill in the gaps in the text*

Linear function

Introduction. The theme is called linear function. The linear function is used in the different sections of mathematics and other natural sciences.

Body. The standard form of the linear function is $y = ak + b$, where $a, b, k \in R$. The graph of the linear function is the _____, k is called the _____ of the straight line. As is known, the straight line can be constructed using two points.

For example, draw the graph of the function $y = 2x - 3$. In order to obtain the _____ of two points we are going to use the table.

x	0	1
y	-3	-1

In order to fill the table we take any value of x and evaluate the corresponding value of y using the formula $y = 2x - 3$. Now we have coordinates of two points $A(0,-3)$ and $B(1,-1)$. Let us draw Cartesian coordinate system. It consists of origin of coordinates, two _____ axes: x-axis and y-axis with the indicated positive directions of these _____. We mark the obtained points $A(0,-3)$ and $B(1,-1)$ on the Cartesian coordinate system and construct the straight line through these points (Figure 1).
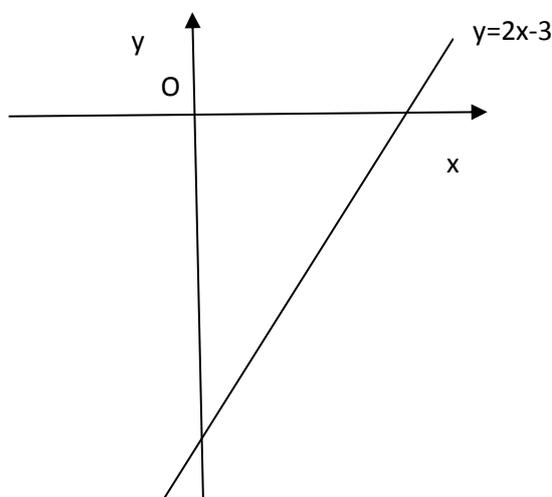

Figure 1 – The graph of the linear function

Let us consider the main _____ of the linear function.

Properties:

1. The domain of definition: $x \in (-\infty, +\infty)$.

2. The range of function $y \in (-\infty, +\infty)$.

3. If $k > 0$, then the function _____. The _____ between the straight line and x-axis is _____ angle. If $k < 0$, then the function _____. The angle between the straight line and x-axis is _____ _____.

Let us consider the examples.

1. Does the point $A(7,2)$ belongs to the graph of the function $y = 2x - 3$?

Solution.

In order to answer this question it is necessary to substitute the coordinates of the point A into the _____ $y = 2x - 3$. We obtain $2 = 2 \cdot 7 - 3$. This equality is _____, hence, point A does not belong to the graph of the function $y = 2x - 3$.

2. Find such point on the straight-line $y = 2x - 3$:

- abscissa of which is equal to 7;
- ordinate of which is equal to 5.

<center>Solution.</center>

In order to find _____ of the point it is necessary to substitute 7 instead of x into the function $y = 2x - 3$. After the substitution we have $y = 2 \cdot 7 - 3 = 11$. In order to find _____ of the point it is necessary to substitute 5 instead of y into the function $y = 2x - 3$. After the _____ we have $5 = 2 \cdot x - 3$. From here $x = \dfrac{5+3}{2} = 4$. Finally we obtain two points $K(7,11)$, $L(4,5)$.

Let us consider two _____ _____ $y = k_1 x + b_1$ and $y = k_2 x + b_2$. As we have already mentioned above k is called the_____.

If $k_1 = k_2$ then the straight-lines are parallel. If $k_1 \neq k_2$ then the straight-lines intersect.

3. Find the point of intersection of the straight lines $y = 2x - 3$ and $y = -3x + 2$.

<center>Solution.</center>

The point of intersection is the _____ point, hence, we are going to solve the following _____ $\begin{cases} y = 2x - 3 \\ y = -3x + 2 \end{cases}$. Let us equate the left-hand sides of the equations $2x - 3 = -3x + 2$. From here we have $x = 1$. Then we substitute $x = 1$ into the first _____ and obtain $y = -1$. Hence, we obtain the point of _____ $P(1,-1)$.

Conclusions. In this report we have considered the basic data, related to the theme Linear functions, the main properties and the solutions of the simplest problems.

Glossary:

linear function – лінійна функція;	origin of coordinates – початок координат;
standard form – загальний вигляд;	
slop – кутовий коефіцієнт;	point of intersection – точка перетину;
graph – графік;	to substitute – підставляти;
straight line – пряма;	equation – рівняння;
point – точка;	parallel – паралельний;
right angle – прямий кут;	abscissa – абсцисса;
acute angle – гострий кут;	ordinate – ордината;
obtuse angle – тупий кут;	equality – рівність;
to increase – зростати;	domain of definition – область визначення;
to decrease – спадати;	
Cartesian coordinate system – декартова ситема координат	range of function – область значення

✍ ***Task 5***

List of skills and link them with types of thinking: creative thinking, systemic thinking, thinking outside the box

- Identify the properties of objects (essential and non-essential);
- Transition from the particular to the general;
- Transition from objects to relationships;
- Find innovative, original solution to problems and formulate hypotheses;
- Distinguish between necessary and sufficient features of objects;
- Transition from linear to non-linear thinking;
- Provide logical arguments for reasoning;
- Identify common and distinctive properties of objects

PART 2

✍ Task 1 Read and translate the given text from English

- Describe the main idea of the text (or suggest a text name);
- List the basic terms;
- Are there multi-word terms? Translate them.

Text 1.

The results of the scientific study are in effect meaningless if they cannot be replicated. The significant part (up to 5%) of the conducted experiments failed to replicate. Even the top-tier journals publish the results of the experiments, which cannot be replicated. The experts have found the effective technique for the verification of the results. Given tokens, each with a nominal value of 50 cents, the experts were invited to trade on the outcome of the re-run experiments. They bought the «shares» and made the stakes. Some of the specialists «became richer» due to the inkling ahead of time of which of the studies would not replicate. Their shares were worth nothing. The experts should reject the studies that cannot be replicated and adopt only the reliable studies.

Text 2.

The School of Informatics in collaboration with recognized state universities in England and the US, offers high-end studies with an emphasis on practical application. Both studies in Engineering and Informatics are in high demand in today's labour market, which is constantly looking for leading executives who will be able to respond to rapid developments in the sector.

Optimization applications in Business Processes through Information Systems in all business sectors, are the main driver of competitive advantage. Combined with the lack of properly trained executives with a degree in Informatics in the Greek and international market, they create a strong demand for professionals with good practical and theoretical knowledge of their specialty. In response to this demand and confirming its reputation as one of the leading colleges in Greece, New York College offers Bachelor's and Master's degrees in cutting-edge technology specialties in the fields of Computer Science, Computer Networks and Internet and Web Applications.

Text 3.

In the same direction, New York College has been certified by Cisco Systems as Cisco Networking Academy and offers its students the ability to perfect their network management and security skills.

The Student's Club has an active interest in creating projects related to the IT industry. Students are encouraged by the Department of Student Affairs to participate in these groups and gain experience and useful skills for their personal and professional development.

Graduates with Computer studies can work in areas of computer systems programming, software engineering, network support and management, database design and management, system analysis and control, web page design and more.

Text 4.

The Quantitative Reasoning measure assesses your:
- basic mathematical skills;
- understanding of elementary mathematical concepts;
- ability to reason quantitatively and to model and solve problems with quantitative methods.

Some of the questions in the measure are posed in real-life settings, while others are posed in purely mathematical settings.

The skills, concepts, and abilities are tested in the four content areas below:
- arithmetic topics include properties and types of integers, such as divisibility, factorization, prime numbers, remainders, and odd and even integers; arithmetic operations, exponents, and roots; and concepts such as estimation, percent, ratio, rate, absolute value, the number line, decimal representation and sequences of numbers;
- algebra topics include operations with exponents; factoring and simplifying algebraic expressions; relations, functions, equations and inequalities; solving linear and quadratic equations and inequalities; solving simultaneous equations and inequalities; setting up equations to solve word problems; and coordinate geometry, including graphs of functions, equations, and inequalities, intercepts, and slopes of lines;

- geometry topics include parallel and perpendicular lines, circles, triangles − including isosceles, equilateral, and 30°-60°-90° triangles − quadrilaterals, other polygons, congruent and similar volume, the Pythagorean theorem and angle measurement in degrees. The ability to construct proofs is not tested;

- data analysis topics include basic descriptive statistics, such as mean, median, mode, range, standard deviation, interquartile range, quartiles, and percentiles; interpretation of data in tables and graphs, such as line graphs, bar graphs, circle graphs, boxplots, scatterplots and frequency distributions; elementary probability, such as probabilities of compound events and independent events; random variables and probability distributions, including normal distributions; and counting methods, such as combinations, permutations, and Venn diagrams.

Text 5.

These topics are typically taught in high school algebra courses or introductory statistics courses. Inferential statistics is not tested. The content in these areas includes high school mathematics and statistics at a level that is generally no higher than a second course in algebra; it does not include trigonometry, calculus, or other higher-level mathematics. The publication Math Review, which is available at www.ets.org/gre/prepare, provides detailed information about the content of the Quantitative Reasoning measure. The mathematical symbols, terminology, and conventions used in the Quantitative Reasoning measure are those that are standard at the high school level. For example, the positive direction of a number line is to the right, distances are nonnegative, and prime numbers are greater than 1. Whenever nonstandard notation is used in a question, it is explicitly introduced in the question. In addition to conventions, there are some assumptions about numbers and geometric figures that are used in the Quantitative Reasoning measure. Two of these assumptions are (1) all numbers used are real numbers and (2) geometric figures are not necessarily drawn to scale. More about conventions and assumptions appears in the publication Mathematical Conventions, which is available at www.ets.org/gre/prepare.

Text 6.

The Quantitative Reasoning measure has four types of questions:
- quantitative Comparison questions;
- multiple-choice questions – Select One Answer Choice;
- multiple-choice questions – Select One or More Answer Choices;
- numeric Entry questions.

Each question appears either independently as a discrete question or as part of a set of questions called a Data Interpretation set. All of the questions in a Data Interpretation set are based on the same data presented. For the paper-based test, you are allowed to use a basic handheld calculator on the Quantitative Reasoning measure. The calculator will be provided to you at the test site, and you may keep it when you are finished with the test. Information about using the calculator to help you answer questions appears later.

Quantitative Comparison Questions

Questions of this type ask you to compare two quantities – Quantity A and Quantity B – and then determine which of the following statements describes the comparison:

- quantity A is greater;
- quantity B is greater;
- the two quantities are equal;
- the relationship cannot be determined from the information given.

✍ *Task 2 Give the definition of the concept of prime number using internet. Answer the following questions:*

- Give the examples of prime number.
- How many even prime numbers do you know?
- Give the greatest prime number, which is known currently.

✍ *Task 3 Find the material on the linear inequalities using internet. Answer the following questions:*

- Give the standard form of the linear inequality.
- Describe analytical and graphical methods of solving the linear inequalities.
- What happens when we multiply both sides of the inequality by the negative number?

PART 3

✍ *Task 1 Read an article* **https://www.mimjournal.com/post/main-differences-between-a-summary-and-an** *and formulate the basic differences between an abstract and a summary*

Main Differences Between a Summary and an Abstract

Writing for an abstract may have similar steps to writing for a summary, but they have different objectives and requirements. While an abstract is a short, descriptive paragraph overviewing your entire paper from introduction to the findings or future studies, a summary includes your entire paper and its visuals,

just in a shorter length and more concise than it is original document. This article will discuss the key parts to include in an abstract and a summary.

Abstract

The abstract should summarize the main points of your paper without specific detail. So it should communicate, if relevant: main question of your paper, methods, major results or findings, the importance of results or findings, and how they shape a theory or answer your question.

Start with the main point: The beginning statement should describe the main point you are trying to communicate to the reader. Sometimes, this may be the thesis, or it may be the research topic, all depending on what kind of paper you are writing.

Keep it concise: This is meant to briefly discuss your article, and only talk about the main points between the introduction, body, and conclusion.

Remember the length: This abstract is meant to be a paragraph; therefore, each piece of information given in the summary should be short, key parts of the article.

Follow the same order: Make sure your abstract follows the same order that your paper is written in.

Keep it to the facts: Keep in mind to only use factual statements or observations and avoid using opinions, repetition, and any 'fluff' content.

Create an effective ending: The last sentence should be able to effectively wrap up the findings of the article.

Summary

On the other hand, the summary is a much longer version of the abstract, containing more details, visuals, and opinions.

Follow the same order: Again, this should follow the same order as your paper.

Keep in mind the length: Remember the length that the publication is asking your article to be at. With publishing for *MiMJ*, we are asking for a 2-3 page, 1000 word limit. With this, try to be concise and only have information that is key to conveying your message in your paper.

Facts and opinions allowed: Unlike writing for an abstract, you are not limited to what kind of information you will be giving; you can include any fact, opinion, or finding, as long as it is a key piece of information that still allows your paper to be concise.

You can use visuals: The use of visuals is welcomed while writing your summary. However, make sure they are necessary to convey your message to the reader due to the fact that summaries need to be concise (do you think I mentioned

that your summary needs to be concise enough?). Secondly, make sure each visual that is used is explained well, as summaries are for a general audience.

Remember the format: You still have to organize your paper in the format that is required by the publication you wish to publish your article with. With publishing with *MiMJ*, we require your paper to be written in 7th edition APA format.

Remember your citations: As any paper would include, citations are an important way to credit the sources you used to create your wonderful paper. In addition, make sure your citations abide by the format you are using. This also ties in having a literature cited page as well.

In conclusion, your summary should be a shorter, more concise version of your original paper that still includes all important information and effectively translates the message from your paper. Whereas the abstract should be a short paragraph that presents all key facts and information. In the future, try to refer to this post as a mental checklist after writing any abstract or summary, or even while you are writing!

Furthermore, have you previously used any of these ideas while writing your summary? Are there any other tips that have helped you while writing a summary?

Щоб підготуватись до написання анотації або стислого змісту (summary) вашої кваліфікаційної роботи, слід спочатку ознайомтесь з вимогами до оформлення кваліфікаційних робіт магістрів. Щоб підкреслити вирішені в роботі завдання, використовуйте в анотації відповідні слова: огляд, аналіз, метод, порівняння, узагальнення, гіпотеза, доведення або спростування, застосування тощо.

✍ *Task 2 Read the abstract of the article at the link*
https://fmo-journal.org/index.php/fmo/article/view/411/263
Select and write down sentences from it that meet recommendations for the abstract