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**TABULATION OF THE FUNCTION**

First homework in course IAX0583

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**AUTHORS DECLARATION**

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication. All works and major viewpoints of the other authors, data from other sources of literature and elsewhere used for writing this paper have been referenced.

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**CONTENTS**

1. **TASK STATEMENT**

The task is to construct the algorithm of the task and the corresponding program in C language. All raw data are real numbers and are entered from the keyboard. The results are displayed on the screen in the form of a table, the columns of which are the values ​​of the argument x and the function y = f(x).

The function value is displayed only if it exists. If the value of the function is not specified for the given argument x or is complex, then 'none' or 'complex' must be output in the y column.

* 1. **Specific task**

The basis of the tabulation method and the function to be tabulated is matriculation number: 243487.

***1.1.1. Method***

The initial and final values ​​A and B of the argument x and the step H are given. Valid conditions: A < B; H > 0.

The value of the function y is calculated in points:

* A;
* A+H;
* A + 2H;
* A + 3H;

until the condition that the value of the argument < B holds.

***1.1.2. The function***

1. **ANALYSIS OF THE FUNCTION y=f(x)**
   1. **The domain of the function**

In order for the parameters entered by the user to be computable, the domain of this function needs to be found. The parameters, concerning the function ,are computable, when:

1. the denominator is not equal to 0.

7x ≠ 0 => x ≠ 0

The domain of this function is x ∈ {R} \ 0.

* 1. **The graph of the function**

I used *GeoGebra* software to display the graph. When the graph is zoomed in on y-axis, it is visible that the graph never touches or crosses the y-axis, therefore, the domain of this function found by calculating, is correct.

**A graph of a function

Description automatically generated**

Figure 1. Graph of the function

1. **SOLUTION DESCRIPTION**

The goal of this programme is to solve …

The user enters 3 parameters:

* the initial value A (which is smaller than B);
* the final value B (which is bigger than A);
* the step H (which is bigger than 0),

which all are real numbers.

All values ​​are entered separately and in case of incorrect form or parameters not being met, the user is asked to re-enter the values.