TECHNICAL UNIVERSITY OF TALLINN

Faculty of Engineering

Department of Computer Systems

IAX0583 Programming I

**Calculating function 𝒚=(𝒙)**

Homework I

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**Author’s declaration of originality**

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.

**Assignment**

**Generating task**

My task was generated based on my student code.

**Method**

**4. The initial and final values of the argument x A and B, step H and the coefficient C of the step are given. Terms and conditions apply: A < B, H > 0; C >= 1. The value of the function y is calculated in points:**

**A  
A + H  
A + H + CH  
A + H + CH + C2H**

**until the condition remains that the value of the argument < B, but not more than 15 points.**

**Function**:

A math equations with black text

Description automatically generated with medium confidence

Figure 1: picture of assigned function

**Understanding task**

I got quite a tricky equation thus my supervisor simplified it a bit. The value of the function y’s point at the last equation was simplified from A + H + CH + C2H to **A + C^(i)H**.

I understood that I have to:

a) Get user input for starting value A, final value B, step H and coefficient C.

b) Implement an algorithm, that calculates value of x.

c) Implement an algorithm, that calculates values of y per x.

d) Check if range is okay.

d) Print values of x, y or corresponding 'errors'.

Conditions for function:

a) A < B;

b) H > 0;

c) C >= 1

**Function y = f(x)**

**A math equations with black text

Description automatically generated with medium confidence**

Figure 2: picture of assigned function

Range of this function:

𝑥∈( -∞ ; -5 ) U( 4 ; ∞ )

A graph paper with numbers and points

Description automatically generated

Figure 3: picture of graph f(x)

**Program description**

**UML-chart**

A screenshot of a computer screen

Description automatically generated

Figure 4: UML-chart input

A screenshot of a computer

Description automatically generated

Figure 5: UML-chart process

A screenshot of a computer

Description automatically generated

Figure 6: UML-chart output

**Code in C**

A screenshot of a computer program

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Figure 7: Code part 1

A screenshot of a computer code

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Figure 8: Code part 2