Tasks for independent work- Week 1

Task 1. Write a program that would ask the user:
First name, Last Name, Age, Phone number
- Last name, first name ("Your last name, first name?")
- age ("How old are you?")
- phone number ("Your phone number?")
After that would output three lines:
"Your first name, last name"
"Your age"
"Your phone number"

Task 2. Make up an algorithm for calculating the area.

Task 3. Given a real number A containing two decimal places and two after. Get a new number by changing the integer and fractional parts in the number A.
Let's try to find the integer and fractional parts of the number. And then just collect a new number, increasing the fractional part by 100 times and reducing the whole part by 100 times too.

Task 4. Write down the algorithm for calculating the expression using intermediate values:

$$Y = \frac{A^2}{3} + \frac{A^2 + 4}{6} + \frac{\sqrt{A^2 + 4}}{4} + \frac{\sqrt{(A^2 + 4)^3}}{4}$$

Task 5. To create a program for guessing the intended number using a computer. The computer prompts the performer to perform the following actions and enter the result:

a) multiply the planned number by 5;

b) add 8;

c) multiply the sum by 2.

Based on the entered result, the computer determines the number and prints it on the screen.

2 - Tasks for variables, cycles

Task 2.1 Smart Calculator

Create a program that will receive actions from the user (+, -, *, /).

Depending on the action, the sum, difference, product or quotient of two numbers specified by the user will be displayed.

For example:

"First number: 2"

"Operation: -"

"Second number: 3"

2 - 3 = -1

Task 2.2- Checking for zero

Add a division by zero check to the previous task.

Write down the verification using the abbreviated form of the condition.

Task 2.3- Triple check

Create a variable with the value 14.

Create a check that outputs the value "True" if the variable is greater than 10, while not equal to 12 and at the same time less than or equal to the number 15, or if the variable is equal to the number 18

Task 2.4 - **Working with cycles**

Print a column of numbers from 34 to 67 with only even numbers output. Use the while loop for this task.

Task 2.5- **Do while loop**

There is no do loop in Python..while, however, you can easily

create it yourself. Create such a loop.

For those who don't know, the do cycle..while is a loop that is executed at least once, then checks the condition and if it is not true, then exits

loop, otherwise continues the next iteration.

Task 2.6 - **Output of numbers**

Print the numbers from 1 to 100 with the omission of the numbers 50 and 99.

Create the output using the for loop, as well as the while loop.

Task 2.7 - **A little game**

Ask the user to enter a word, as well as a number. Use loops to output each character of the string, and the character must

be repeated the number of times equal to the number that the user entered. Each subsequent new character must be output from a new line, for example:

Hello # What the user entered

3 # The number that the user entered

Result

PPP

rrr

iii

vvv

eee

ttt