Student Number: ┕━┷━┷━┷━┷━┷━┷━┷━┷━┙

UTORid: ┕━┷━┷━┷━┷━┷━┷━┷━┷━┙

Family Name: _____   **Given Name:** _____

Read and follow all instructions on this page, and fill in all fields appropriately.

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*Do **not** turn this page until you have received the signal to start.*
(Please fill out the identification section above, and read the instructions below.)
Good Luck!

This exam is double-sided, and consists of 4 questions on 10 page (including this one). When you receive the signal to start, please make sure that you have all pages.

- Read all instructions before completing any questions

- Do not remove any pages from the exam booklet.

- Write your details on the top of the first page.

- Write your name and indicate your tutorial on the back of the last page.

- If you use any space for rough work, indicate clearly what you want marked.

- Write as clearly and legibly as possible. No marks will be awarded to unreadable answers.

Skills Demonstrated

	User I/O	Variables	Selection	While Loops	For Loops
Q1					
Q2					
Q3					
Q4					
TOTAL					

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 1.

Completion of this question demonstrates the skills of: User I/O and Variables

In the space below, write a simple program that acts as a calculator for the user. The program should ask the user for two numbers, and then tell the user the result of those numbers under addition, subtraction, multiplication and division. A sample input/output has been provided below. Your program can assume the user will always input two numbers (hint: careful, even though the user is typing numbers, remember that Python doesn't know that).

```
Please enter the first number: 7.5
Please enter the second number: 3.5
Addition: 7.5 + 3.5 = 11.0
Subtraction: 7.5 - 3.5 = 4.0
Multiplication: 7.5 * 3.5 = 26.25
Division: 7.5 / 3.5 = 2.142857142857143
```

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 2.

Completion of this question demonstrates the skills of: selection

In the space below, write a simple program that acts as a calculator for the user. The program should ask the user for two numbers, and then ask the user for an operation to perform on those numbers: addition, subtraction, multiplication or division. A sample input/output has been provided below. Your program can assume the user will always input two numbers, and an operation from the list of valid operations

```
Please enter the first number: 7.5
Please enter the second number: 3.5
Please enter the operation to perform: addition
Addition: 7.5 + 3.5 = 11.0
```

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 3.

Completion of this question demonstrates the skills of: selection and while loops

In the space below, write a simple program that acts as a calculator for the user. The program should ask the user for an operation to perform, and then ask for numbers until they user tells them to stop, then perform that operation on that list of numbers: addition, subtraction, multiplication or division. A sample input/output has been provided below. Your program can assume that the user provides valid input.

```
Please enter the operation to perform: subtraction
Please enter your starting number: 25
Enter another number (or 'STOP' to stop): 3
Enter another number (or 'STOP' to stop): 4
Enter another number (or 'STOP' to stop): 5
Enter another number (or 'STOP' to stop): STOP
Result = 14
```

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 4.

Completion of this question demonstrates the skills of: selection and for loops

In the space below, complete the program that acts as a calculator for the user. The code already fills two lists of numbers and a list of operations, your job is to use those lists to fill the results list. You may not edit any existing code.

```
# set this to be "Y" so that we will enter the loop the first time
user_continue = "Y"

# these are the lists we will fill in the first part of our code
numbers_list_left = []
numbers_list_right = []
operations_list = []
results_list = []

# keep looping until the user says they're done
while(user_continue == "Y"):
    # ask the users for values and add them to the list
    left_num = input("Enter first number: ")
    numbers_list_left.append(float(left_num))
    right_num = input("Enter second number: ")
    numbers_list_right.append(float(right_num))
    operation = input("Enter operation: ")
    operations_list.append(operation)
    user_continue = input("Continue? (Y/N): ")

    # we won't actually calculate the result here... sure would be easier
    # if we did, but too bad
    results_list.append(0)

print("We are now outside the loop")
## YOUR CODE GOES HERE
```

Family Name: _____ **Given Name:** _____

Please select your tutorial (So we know how to get your test back to you)

Tutorial	Time	Check
TUT0014	MO 09:00 11:00	
TUT0001	MO 13:00 15:00	
TUT0002	MO 15:00 17:00	
TUT0003	TU 09:00 11:00	
TUT0005	TU 16:00 18:00	
TUT0006	TU 18:00 20:00	
TUT0007	TH 09:00 11:00	
TUT0008	TH 11:00 13:00	
TUT0009	TH 13:00 15:00	
TUT0010	TH 15:00 17:00	
TUT0011	TH 17:00 19:00	
TUT0004	FR 09:00 11:00	
TUT0012	FR 11:00 13:00	
TUT0013	FR 13:00 15:00	