SENG 1000
Software Engineering Foundations and Practice
Assignment 1

Date Assigned: Thu. 23rd Jan.   Due Date: Thu. 30th Jan. Midnight

Maximum Possible Marks: 100

This assignment serves two purposes:

- First, it is designed to get you started with Python immediately, particularly with the command shell or the Python IDE.
- Second, it gives you hands on experience with Python expressions, using assignment statements, math functions, and creating scripts.

Note:

- Import "import math" into your python script to use math functions.
- While executing, any of the following statements, if you encounter an error, explain the reason for the error in short sentence.

Questions:

1. [15 Points] Write a python script "q1.py" to evaluate all the following expressions. Then fill the following table (submit q1.py and the Table below):

Expression	Result
2 * 3	
2 ** 3	
5+2*5	
(5 + 2) * 5	
-4 - -4 - -4	
2 ** 2 ** 0	
(2 ** 2) ** 0	
6 // 2	
6 // 4	
6.0 / 4.0	
2.0 // 2.5	
9.0 * 0.5	
9.0 ** 0.5	
6 % 2	
8 % 3	
6.2 % 4	

2. [15 Points] Write a python script "q2.py" to evaluate all of the following expressions, then fill the following table (submit q2.py and the Table below):

Expression	Result
float(4)	
int(5.3)	
int(True)	
float(int(5.3))	
int(5.7)	
float(7) // 4	
int(7 / 4)	
6.2 and False	
True and 6.2	
type(4.5)	
type(True and 3)	

3. [10 Points] How does "**and**" and "**or**" operators work if one of the two operands is not a Boolean values?

4. [15 Points] Write a python script "q4.py" to evaluate all of the following expressions. Then fill the following table (submit q4.py and the Table below):

Expression	Result
min(25, 4)	
max(25, 4)	
min(5,max(7,4))	
abs(25)	
abs(-25)	
round(25.6)	
round(-25.6)	
round(25.64, 0)	
round(25.64, 1)	
round(25.64, 2)	
len('Hello')	
len('Hello World')	
chr(65)	
chr(66)	
ord('A')	
ord('AB')	

5. [15 Points] Write a python script "q5.py" to evaluate all of the following expressions. Then fill the following table (submit q5.py and the Table below):

Expression	Result
math.sqrt(9)	
math.sqrt(-9)	
sqrt(4)	
math.floor(3.7)	
math.ceil(3.7)	
math.ceil(-3.7)	
math.trunc(3.7)	
math.trunc(-3.7)	
math.pi	
math.cos(math.pi)	
math.acos(1.0)	
math.e	
math.log(math.e)	
math.log(4,2)	

6. [30 points] Write a python script q6.py to accept two integer numbers from the user using a prompt and print the result of all operations like shown below. Also, write appropriate comments for this program. (Submit q6.py)

Example output:

```
Enter first number: 6
Enter second number: 2

Addition: 6 + 2 = 8
Subtraction: 6 – 2 = 4
Multiplication: 6 * 2 = 12
Division: 6 / 2 = 3.0
Integer Division: 6 // 2 = 3
Modulus: 6 % 2 = 0
Exponent: 6 ** 2 = 36
```