

Computer Programming

Python #2 – Math Library

Background:

This assignment is designed to determine if you can use the functions in the math library. Remember, when using the trig functions, the argument must be in radians, not degrees!

Assignment:

1. In your Computer Programming folder, create a folder titled *first_last_python_2*. Start IDLE. Create a new file. Save it in your *first_last_python_2* folder as *math_lib.py*.
2. Declare and initialize the following variables:

```
sin_degrees = 187
cos_degrees = 122
base = 14.72
exponent = 3.801
log_param = 72.0
```

3. You will now need to use the variables above to calculate values for d1 and d2 using the formulas below:

$$d1 = 3\pi\sin(187) + |\cos(122)|$$

$$d2 = (14.72)^{3.801} + \ln(72)$$

4. When you have calculated the values of d1 and d2, use print statements to output their values. The output should look like this:

```
d1 = -0.618672237585067
d2 = 27496.988867001543
```

5. Create a text document called *output.txt* in your *first_last_python_2* folder. You will run your code 4 times with the following 4 values for *sin_degrees*, *cos_degrees*, *base*, *exponent*, and *log_param*:

Run #	sin_degrees	cos_degrees	base	exponent	log_param
1	205	50	12.6	2.523	30.6
2	45	300	5.25	1.902	40.5
3	130	110	45.6	4.521	52.1
4	350	255	3.87	2.34	62.7

6. After each run, copy the output from your Python shell window and paste it into the *output.txt* file.

Before you turn this assignment in, make sure that your *first_last_python_2* folder has 2 files:

1. *output.txt*
2. *math_lib.py*

Zip your *first_last_python_2* folder and turn it in in the usual manner.