PGR107 – Python Programming

Programming With Numbers and Strings

1. What are the values of the following expressions? In each line, assume that
   x = 2.5
   y = -1.5
   m = 18
   n = 4

   a. x + n * y - (x + n) * y
   b. m // n + m % n
   c. 5 * x - n / 5
   d. 1 - (1 - (1 - (1 - (1 - n))))
   e. sqrt (sqrt (n))

2. What are the values of the following expressions, assuming that ***n*** is 17 and ***m*** is 18?
   a. n // 10 + n % 10
   b. n % 2 + m % 2
   c. (m + n) // 2
   d. (m + n) / 2.0
   e. int (0.5 * (m + n))
   f. int (round (0.5 * (m + n)))

3. What are the values of the following expressions? In each line, assume that
   s = "Hello"
   t = "World"

   a. len (s) + len (t)
   b. s[1] + s[2]
   c. s[len (s) // 2]
   d. s + t
   e. t + s
   f. s * 2

4. Write a program that prompts the user for two integers and then prints
   a. The sum
   b. The difference
   c. The product
   d. The average
   e. The distance (absolute value of the difference)
   f. The maximum
   g. The minimum

5. Properly format the outputs in Exercise 4 as follows.

Sample output:

```
Enter number 1:   20
Enter number 2:   25

Sum =             45
Difference =      -5
Product =         500
Average =         22.5
Distance =        5
Maximum =         25
Minimum =         20
```

6. Write a program that asks the user for the lengths of the sides of a rectangle. Then print the area and perimeter of the rectangle.

b

a

Area = a * b

Perimeter = 2 (a + b)

7. Write a program that initializes a string variable and prints the first two characters, followed by three periods, and then the last two characters. For example, if the string is initialized to "Mississippi", then print Mi...pi.

8. Write a program that reads a five-digit positive integer and breaks it into a sequence of individual digits. For example, the input 16384 is displayed as

   1 6 3 8 4