EE6310

Problem Set 2

1. Predict the output of the following code. Be ready to explain. For the methods that you have not seen, look up Google to understand!

   a.
   ```
   input_string = "hello"
   print(input_string.upper())
   ```

   b.
   ```
   input_sentence = "Python programming is fun"
   print(len(input_sentence.split()))
   ```

   c.
   ```
   main_string = "hello world"
   sub_string = "world"
   print(main_string.find(sub_string))
   ```

   d.
   ```
   input_sentence = "I love Python"
   print(input_sentence.replace("love", "like"))
   ```

2. Represent the following calculation in python code
   a. $2 \times 10^3 \times 3 \times 10^{-2}$
   b. $\frac{2}{3} \div \frac{5}{8}$
   c. $x = 5;\ (3x^2 + 5x - 7) \times (2x^3 - 4x + 6)$
   d. Remainder and quotient of 256 / 18
3. Use the math package in python to calculate the following values. Use Google to search for the function!
   a. $\sin\left(\frac{\pi}{2}\right)$
   b. e^2
   c. $\log_{10} 23$
   d. $\lceil 5 \rceil$ (ceil)
4. Make if statements for the following program
   a. Write a Python program that takes a student's score as input and prints out their grade based on the following criteria:

      Score >= 90: "A"

      80 <= Score < 90: "B"

      70 <= Score < 80: "C"

      60 <= Score < 70: "D"

      Score < 60: "F"

b. Write a Python program that takes two numbers as input and prints out which one is greater, or if they are equal.
c. Write a Python program that takes a number as input and prints out whether it is positive, negative, or zero.
d. Write a Python program that takes three sides of a triangle as input and prints out whether it is equilateral, isosceles, or scalene. Hint: An equilateral triangle has all three sides equal, an isosceles triangle has two sides equal, and a scalene triangle has no equal sides.