Coding logic exercise

1) Write a Python program/function to print the sum, largest number, smallest number, average of the numbers in a list. eg. [1,2,3,4,5]

Sum: 15

Max: 5

Min: 1

Mean: 3

2) Write a Python function that takes two lists and returns True if they have at least one common member.

eg. [“Tom”, “Bob”, “Sue”, “Rachel”], [“Bob”, “Susan”, “Roger”, “Mike”]

returns true as Bob is common.

3) Write a Python program/function to combine two dictionary adding values for common keys.

eg.

d1 = {'a': 100, 'b': 200, 'c':300}

d2 = {'a': 300, 'b': 200, 'd':400}

Sample output: {'a': 400, 'b': 400, 'd': 400, 'c': 300}

4) Write a Python program/function which iterates the integers from 1 to 100. For multiples of three print "Fizz" instead of the number and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".

*Sample Output* :

fizzbuzz

1

2

fizz

4

buzz

5) Write a Python program/function to check the validity of password input by users.

Validation :

• At least 1 letter between [a-z] and 1 letter between [A-Z]. • At least 1 number between [0-9].

• At least 1 character from [$#@].

• Minimum length 6 characters.

• Maximum length 16 characters.

6) Write a Python function that takes a list and returns a new list with unique elements of the first list.

*Sample List :* [1,2,3,3,3,3,4,5]

*Unique List :* [1, 2, 3, 4, 5]

7) Write a function which calculates the length of a hypotenuse of a right angle triangle given height and base.

Hint: Pythagorean theorem

8) Scrabble score:

Given a word, compute the Scrabble score for that word where the values are as follows

Letter Value

A, E, I, O, U, L, N, R, S, T 1

D, G 2

B, C, M, P 3

F, H, V, W, Y 4

K 5

J, X 8

Q, Z 10

eg. “Cabbage” is worth 14 points

• 3 points for C

• 1 point for A, twice

• 3 points for B, twice

• 2 points for G

• 1 point for E

9) Write a Python program to find the greatest common divisor (gcd) of two integers.

Hint: this is a recursive function