

# Problem set one

## ANSWERS

### Question1

Integer

Double or Float

Boolean (True)

Char or String

Integer (10)

String ('55')

String ('52')

Float or Double (2.5)

Integer (1)

Set {1, 2, 5}

Boolean (False)

Float or Double

### Question2

a.

```
print(len('Supercalifragilisticexpialidocious'))
```

output:

34

b.

```
print('ice' in 'Supercalifragilisticexpialidocious')
```

output:

True

c.

```
a = len("Supercalifragilisticexpialidocious")
b = len("Honorificabilitudinitatibus")
c = len("Bababadalgharaghtakamminarronnkonn")
if(a >= b and a >= c):
    if(a == b):
        print(a, "Supercalifragilisticexpialidocious and
Honorificabilitudinitatibus are the longest words.")
```

```

elif(a == c):
    print(a, "Supercalifragilisticexpialidocious and
Bababadalgharaghtakamminarronkonn are the longest words.")

else:
    print(a, "Supercalifragilisticexpialidocious is the longest word.")

elif(b >= a and b >= c):
    if(b == a):
        print(b, "Supercalifragilisticexpialidocious and
Honorificabilitudinitatibus are the longest words.")

        elif(b == c):
            print(b, "Honorificabilitudinitatibus and
Bababadalgharaghtakamminarronkonn are the longest words.")

            else:
                print(b, "Honorificabilitudinitatibus is the longest word.")

else:
    if(c == a):
        print(c, "Supercalifragilisticexpialidocious and
Bababadalgharaghtakamminarronkonn are the longest words.")

        elif(c == b):
            print(c, "Honorificabilitudinitatibus and
Bababadalgharaghtakamminarronkonn are the longest words.")

            else:
                print(c, "Bababadalgharaghtakamminarronkonn is the longest word.")

```

output:

34 Supercalifragilisticexpialidocious and Bababadalgharaghtakamminarronkonn are the longest words.

d.

```

a = ("Berlioz", "Borodin", "Brian", "Bartok", "Bellini", "Buxtehude", "Berstein")
b = sorted(a)
print("first in the dictionary: ", b[0])
print("last in the dictionary: ", b[-1])

```

output:

first in the dictionary: Bartok

last in the dictionary: Buxtehude

### Question3

```
import math

def triangleArea(a, b, c):
    s = (a + b + c) / 2
    area = math.sqrt(s * (s - a) * (s - b) * (s - c))
    return area

a = float(input("enter the length of the 1st side of the triangle: "))
b = float(input("enter the length of the 2nd side of the triangle: "))
c = float(input("enter the length of the 3rd side of the triangle: "))
area = triangleArea(a, b, c)
print(area)
```

### Question4

```
import array

number = int(input("input the number of elements to be stored in the array : "))
all_array = array.array('i', [])
for x in range(0, number, 1):
    print("element - ", x, end = "")
    enter = int(input(" : "))
    all_array.insert(x, enter)

print("the even elements are : ")
for x in range(0, number, 1):
    if(all_array[x] % 2 == 0):
        print(all_array[x], end = " ")

print()

print("the odd elements are : ")
for x in range(0, number, 1):
    if(all_array[x] % 2 != 0):
        print(all_array[x], end = " ")
```

### Question5

a.

```
def inside(lower_left, top_right, point) :
    if (point[0] > lower_left[0] and point[0] < top_right[0] and point[1] >
lower_left[1] and point[1] < top_right[1]) :
        return True

    else :
```

```

        return False

lower_left = eval(input("enter lower left coordinates: "))
top_right = eval(input("enter top right coordinates: "))
point = eval(input("enter point: "))
print(inside(lower_left, top_right, point))

```

b.

False

True

### Question6

```

def pig(string):
    length = len(string)
    string_1 = ""

    for x in range(0, length, 1):
        if('a' == string[0] or 'e' == string[0] or 'i' == string[0] or 'o' ==
string[0] or 'u' == string[0]):
            string_1 = string + "way"
            break

        if('a' != string[x] and 'e' != string[x] and 'i' != string[x] and 'o' !=
string[x] and 'u' != string[x]):
            string_1 = string_1 + string[x]

        else:
            string_1 = string[x : ] + string_1
            string_1 = string_1 + "ay"
            break

    return string_1

string = input("enter a word : ")
string = string.lower()
print(pig(string))

```

### Question7

```

def bldcount():
    file = open("bloodtype1.txt", "r")
    x = file.read()
    y = x.split()

```

```

count_A = 0
count_B = 0
count_AB = 0
count_O = 0
count_OO = 0
for a in y:
    if("A." in a):
        count_A += 1

    if("B." in a):
        count_B += 1

    if("AB." in a):
        count_AB += 1

    if("O." in a):
        count_O += 1

    if("OO." in a):
        count_OO += 1

if(count_B > count_AB):
    count_B = count_B - count_AB

elif(count_B < count_A):
    count_B = -(count_B - count_AB)
# for A
if(count_A == 1):
    print("there are one patients of blood type A.")

elif(count_A == 0):
    print("there are no patients of blood type A.")

else:
    print("there are", count_A, "patients of blood type A.")

# for B
if(count_B == 1):
    print("there are one patients of blood type B.")

elif(count_B == 0):
    print("there are no patients of blood type B.")

else:
    print("there are", count_B, "patients of blood type B.")

```

```

# for AB
if(count_AB == 1):
    print("there are one patients of blood type AB.")

elif(count_AB == 0):
    print("there are no patients of blood type AB.")

else:
    print("there are", count_AB, "patients of blood type AB.")

# for O
if(count_O == 1):
    print("there are one patients of blood type O.")

elif(count_O == 0):
    print("there are no patients of blood type O.")

else:
    print("there are", count_O, "patients of blood type O.")

# for OO
if(count_OO == 1):
    print("there are one patients of blood type OO.")

elif(count_OO == 0):
    print("there are no patients of blood type OO.")

else:
    print("there are", count_OO, "patients of blood type OO.")

file.close()

bldcount()

```

## Question8

```

from posixpath import split

def curconv(type, amount):
    file = open("currencies.txt", "r")
    x = file.read()
    y = x.split()
    for a in y:

```

```

        if(type == a):
            index = y.index(a)
            amount = amount * float(y[index + 1])

    print(amount)
    file.close()

type = input("enter the type of currency: ")
type = type.upper()
amount = float(input("enter the amount of money: "))
curconv(type, amount)

```

#### Question9

Semantic error (unsupported operand type(s) for +: 'int' and 'str')

exception (out of range.)

logical error

syntax error

logical error

#### Question10

```

def frequencies(string):
    length = len(string)
    list_num = []
    for x in range(97, 123, 1):
        character = chr(x)
        count = 0
        for y in range(0, length, 1):
            if(character == string[y]):
                count += 1

        list_num.append(count)

    return list_num

string = input("enter the string: ")
string = string.lower()
print(frequencies(string))

```