**1. (1 pt) What is a variable’s scope?**

A. Its value

**B. The range of statements in the code where a variable can be accessed.**

C. Its name

**2. (1 pt) What is a local variable?**

**A. A temporary variable that is only used inside a function**

B. The same as a parameter

C. Another name for any variable

**3. (1 pt) Can you use the same name for a local variable as a global variable?**

A. Yes, and there is no reason not to.

**B. Yes, but it is considered bad form.**

C. No, it will cause an error.

**4. (7 pts) Write a function, length, that takes in a list as the input. If the length of the list is greater than or equal to 5, return "Longer than 5". If the length is less than 5, return "Less than 5".**

def length(my\_list):

if len(my\_list) >= 5:

return "Longer than 5"

else:

return "Less than 5"

list1 = input("Enter list1 elements: ").split()

print(length(list1))

list2 = input("Enter list2 elements: ").split()

print(length(list2))

list3 = []

e = input("Enter an element for list3: ")

while e != " ":

list3.append(e)

e = input("Enter an element for list3: ")

print(list3)

print(length(list3))

list4 = ["Corona", 1, 1.6\*10\*\*-19, 'Foo fighters']

print(list4)

print(length(list4))

**5. (7 pts) Write a function named num\_test that takes a number as input. If the number is greater than 10, the function should return "Greater than 10." If the number is less than 10, the function should return "Less than 10." If the number is equal to 10, the function should return "Equal to 10."**

def num\_test(number):

if int(number) > 10:

return "Greater than 10."

elif int(number) < 10:

return "Less than 10."

else:

return "Equal to 10."

for i in range(6):

n = input("Enter an integer: ")

print(num\_test(n))

**6. (8 pts) Write a function that will return the number of digits in an integer.**

def num\_of\_digits(number):

return len(str(number))

def num\_of\_digits\_while(number):

count = 0

while(number > 0):

number = number // 10

count += 1

return count

def digits(number):

d = int(len(str(number)))

x = ''.join(reversed(str(number)))

for i in range(len(x)):

if i + 1 == 1:

print(i+1,"st digit of number: ", x[i])

elif i + 1 == 2:

print(i+1,"nd digit of number: ", x[i])

elif i + 1 == 3:

print(i+1,"rd digit of number: ", x[i])

else:

print(i+1,"th digit of number: ", x[i])

print()

for i in range(len(str(number))):

if i + 1 == 1:

print(i+1,"st digit of number: ", int(number / 10\*\*i) % 10)

elif i + 1 == 2:

print(i+1,"nd digit of number: ", int(number / 10\*\*i) % 10)

elif i + 1 == 3:

print(i+1,"rd digit of number: ", int(number / 10\*\*i) % 10)

else:

print(i+1,"th digit of number: ", int(number / 10\*\*i) % 10)

m = int(input("Enter an integer to calculate its number of digits (up to 10 digits): "))

print()

print(num\_of\_digits(m))

print()

print(num\_of\_digits\_while(m))

print()

print(digits(m))

**7. (8 pts) Write a function that reverses its string argument.**

def reverse(astring, b=""):

for i in range(len(astring)):

b=b+astring[-(i+1)]

return b

a=input("Enter a string")

print(reverse(a))

**8. (8 pts) Write a function that mirrors its string argument, generating a string containing the original string and the string backwards.**

str\_1 = input("Enter a string: ")

def mirror(string, Str1 = "", Str2 = ""):

for letter in string:

Str1 = Str1 + letter

Str2 = letter + Str2

return Str1 + Str2

print(mirror(str\_1))

**9. (8 pts) Write a function that removes all occurrences of a given letter from a string.**

def remove\_letter(string, letter):

for i in string:

if i == letter:

string = string.replace(i,'')

return string

theString=input("Enter a string: ")

theLetter=input("Enter a letter: ")

print(remove\_letter(theString, theLetter))

**10. (10 pts) Write a Python function that will take a the list of 100 random integers between 0 and 1000 and return the maximum value. (Note: there is a builtin function named max but pretend you cannot use it.)**

import random

def max(my\_List):

max = 0

for e in my\_List:

if e > max:

max = e

return max

lst\_1 = []

for i in range(100):

lst\_1.append(random.randint(0, 1000))

print(lst\_1)

print(max(lst\_1))

**11. (8 pts) Write a function to count how many odd numbers are in a list.**

Lst=[3,5,1,6,8,7,11,14]

def countOdd(lst):

odd = 0

for e in lst:

if e % 2 != 0:

odd = odd + 1

return odd

Lst=[3,5,1,6,8,7,11,14]

print(countOdd(Lst))

**12. (8 pts) Sum up all the negative numbers in a list.**

def sumNegative(lst, total = 0):

for e in lst:

if e < 0:

total = total + e

return total

Lst = []

length = int(input("Enter the length of your list: "))

for i in range(length):

elem = int(input("Enter an integer for the list: "))

Lst.append(elem)

print(Lst)

print(sumNegative(Lst))

**13. (8 pts) Write a function findHypot. The function will be given the length of two sides of a right-angled triangle and it should return the length of the hypotenuse. (Hint: x \*\* 0.5 will return the square root, or use sqrt from the math module)**

def findHypot(side1, side2):

hypot = ((side1 \*\* 2) + (side2 \*\* 2)) \*\* 0.5

return int(hypot)

s1 = int(input("Enter side 1 of the right triangle: "))

s2 = int(input("Enter side 2 of the right triangle: "))

print(findHypot(s1, s2))

**14. (7 pts) Write a function called is\_even(n) that takes an integer as an argument and returns True if the argument is an even number and False if it is odd.**

def is\_even(n):

if n % 2 == 0:

return True

else:

return False

for i in range(2):

number = int(input("Enter an integer to check whether it is an even number or not: "))

print(is\_even(number))

**15. (10 pts) You will need to write two functions for this problem. The first function, divide that takes in any number and returns that same number divided by 2. The second function called sum should take any number, divide it by 2, and add 6. It should return this new number. You should call the divide function within the sum function. Do not worry about decimals.**

def divide(n):

return n / 2

def sum(m):

newNumber = divide(m)

print(newNumber, newNumber + 6)

return divide(m) + 6

number = int(input("Enter an integer: "))

print(sum(number))