Assignment on Functions in Python

Q1. Write a program to create function func1() to accept a variable length of arguments and print their value.

```
# call function with 3 arguments
func1(20, 40, 60)
# call function with 2 arguments
func1(80, 100)
Expected output
```

```
Printing values
20
40
60


Printing values
80
100
```

Q 2. Write a function that accept two numbers and returns addition, subtraction, multiplication, division as a result(Return multiple values from a function)

Q 3 Assign a different name to function and call it through the new name

```
def display_student(name, age):
    print(name, age)


display_student("Emma", 26)
```

You should be able to call the same function using

```
show_student(name, age)
```

4. Generate a Python list of all the even numbers between 4 to 30

Expected output

```
[4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28]
```

5. Write a Python function to find the Max of three numbers.

6. Write a Python function to sum all the numbers in a list.

Sample List : (8, 2, 3, 0, 7)
Expected Output : 20

7. Write a Python function to multiply all the numbers in a list.
Sample List : (8, 2, 3, -1, 7)
Expected Output : -336

8. Write a Python program to reverse a string.
 Sample String : "1234abcd"
Expected Output : "dcba4321"

9. Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.

10. Write a Python function to check whether a number falls in a given range.

11. Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.
 Sample String : 'The quick Brow Fox'
Expected Output :
No. of Upper case characters : 3
No. of Lower case Characters : 12

12. 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]

13. Write a Python function that takes a number as a parameter and check the number is prime or not.
 Note : A prime number (or a prime) is a natural number greater than 1 and that has no positive divisors other than 1 and itself.

14. Write a Python program to print the even numbers from a given list.
 Sample List : [1, 2, 3, 4, 5, 6, 7, 8, 9]
Expected Result : [2, 4, 6, 8]

15. Write a Python function to check whether a number is perfect or not. According to Wikipedia : In number theory, a perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself (also known as its aliquot sum). Equivalently, a perfect number is a number that is half the sum of all of its positive divisors (including itself).
Example : The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors, and 1 + 2 + 3 = 6. Equivalently, the number 6 is equal to half the sum of all its positive divisors: (1 + 2 + 3 + 6) / 2 = 6. The next perfect number is 28 = 1 + 2 + 4 + 7 + 14. This is followed by the perfect numbers 496 and 8128.
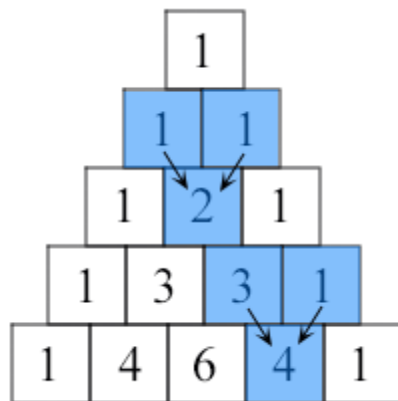

16. Write a Python function that checks whether a passed string is palindrome or not.

Note: A palindrome is a word, phrase, or sequence that reads the same backward as forward, e.g., madam or nurses run.

17. Write a Python function that prints out the first n rows of Pascal's triangle.
Note : Pascal's triangle is an arithmetic and geometric figure first imagined by Blaise Pascal.
Sample Pascal's triangle :

Each number is the two numbers above it added together

17. Write a Python function to check whether a string is a pangram or not. Note : Pangrams are words or sentences containing every letter of the alphabet at least once.
For example : "The quick brown fox jumps over the lazy dog"

18. Write a Python program that accepts a hyphen-separated sequence of words as input and prints the words in a hyphen-separated sequence after sorting them alphabetically.
Sample Items : green-red-yellow-black-white
Expected Result : black-green-red-white-yellow

19. Write a Python function to create and print a list where the values are square of numbers between 1 and 30 (both included).
 17. Write a Python program to make a chain of function decorators (bold, italic, underline etc.) in Python.

20. Write a Python program to execute a string containing Python code.

21. Write a Python program to access a function inside a function.

22. Write a Python program to detect the number of local variables declared in a function.
Sample Output:
3

23. Write a Python program that invoke a given function after specific milliseconds.
Sample Output:
Square root after specific miliseconds:
4.0
10.0
158.42979517754858