Python assignment(Day 3 offline)

1. Given a list of integers, write a program to find those which are palindromes. For example, the number 4321234 is a palindrome as it reads the same from left to right and from
right to left.

Output
Enter numbers:
(Enter 'q' to stop)
67826
67826 is not a Palindrome Number
4321234
4321234 is a Palindrome Number
256894
256894 is not a Palindrome Number
122221
122221 is a Palindrome Number
q

2. Write Python programs to sum the given sequences:
2/9 - 5/13 + 8/17 ..... (print 7 terms)

Output
Sum = 0.3642392586003134

20b. Write Python programs to sum the given sequences:
1^2 + 3^2 + 5^2 + ... + n^2 (Input n)

Output
Enter the value of n: 9
Sum = 165

3. Write a Python program to sum the sequence:
1 + 1/1! + 1/2! + 1/3! + ... + 1/n! (Input n)

Output
Sum = 3.708333333333333

4. Write a program to accept the age of n employees and count the number of persons in the following age group:
(i) 26 - 35
(ii) 36 - 45
(iii) 46 - 55

Output
Enter the value of n: 10
Enter employee age: 45
Enter employee age: 53
Enter employee age: 28
Enter employee age: 32
Enter employee age: 34
Enter employee age: 49
Enter employee age: 30
Enter employee age: 38
Enter employee age: 33
Enter employee age: 53
Employees in age group 26 - 35: 5
Employees in age group 36 - 45: 2
Employees in age group 46 - 55: 3

23a. Write programs to find the sum of the following series:
x - x^2 /2! + x^3 /3! - x^4 /4! + x^5 /5! - x^6 /6! (Input x)

Output
Enter the value of x: 2
Sum = 0.8444444444444444

5. Write programs to print the following shapes:(if row=3)
```
*
* *
* * *
* *
*
```

6. Write programs to print the following shapes:(if row=4)
```
*
* *
*   *
*    *
*   *
* *
*
```

7. Write programs to print the following shapes:(if row =4)

8. Write programs using nested loops to produce the following patterns:

A
A B
A B C
A B C D
A B C D E
A B C D E F

9. Write programs using nested loops to produce the following patterns:

A
B B
C C C
D D D D
E E E E E

10. Write programs using nested loops to produce the following patterns:

0
2 2
4 4 4
6 6 6 6
8 8 8 8 8

11. Write a program using nested loops to produce a rectangle of *'s with 6 rows and 20 *'s per row.