Assignment for 29.3.23

1. Write a program in Lisp to accept a number and check if it appears at the end of its square.

   Eg: 5 appears at the end of its square
   $5^2 = 2\underline{5}$
   Other egs: $25^2 = 6\underline{25}$

2. Write a program in Lisp to check whether a number is magic number or not. Use an user defined function for finding the sum of the digits and another for reversing the sum.
   Eg: 1729 is a magic number because
   Sum of digits of 1729 = 1+7+2+9 = 19
   Reversing the sum of digits = 91
   Product of 19 and 91 is 19 X 91 = 1729 (original number).

3. Write a program in LISP to print the following patterns:
   (a)

```
          *
        * * *
      * * * * *
    * * * * * * *
  * * * * * * * * *
```

   (b)

```
            1
          1 2
        1 2 3
      1 2 3 4
    1 2 3 4 5
```

4. Write a program in LISP to input the values of two variables n and r and calculate ${}^nC_r$.

5. Write a program in LISP to compute the telephone bill for Mr. X as per the call rates given below:

   Rental = 250
   1st 100 calls @Rs. 0.2
   Next 100 calls @ Rs. 0.3
   Remaining calls @ Rs. 0.5

   Accept the number of calls made and calculate the bill.