1)Program to print diamond patterns

```
rows = int(input("Enter number of rows: "))
In [9]:
        for i in range(rows):
            for j in range(rows - i- 1):
                print(" ",end="")
            for k in range(2 * i + 1):
                   print("*" ,end="")
            print()
        for i in range(rows - 1, -1, -1):
            for j in range(rows - i- 1):
                print(" ",end="")
            for k in range(2 * i + 1):
                    print("*" ,end="")
            print()
           ***
         ****
         *****
       ******
       ******
       ******
        *****
         *****
         ****
           ***
           *
```

2) Program for inverted s pattern

```
In [4]: size = int(input("Enter the size of S : "))

for i in range(size):
    if i == 0 or i == size // 2 or i == size - 1:
        print("*" * size)
    elif i < size // 2:
        print(" " * (size - 1) + "*")
    else:
        print("*")

*******

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

Program to find factorial of number

```
In [11]:
    def fact(n):
        if n==0:
            return 1
        return n * fact(n-1)
    n= int(input("Enter value of n: "))
    print(fact(n))
```

40320