

## 1. Write a program print following patterns:

**#a.**

```
for i in range (1,6):
    for j in range (1, 6-i):
        print (' ', end="")

    for j in range (1, i+1):
        if (j == 1 or i == j):
            print ('*', end = ' ')
        else:
            print (' ', end = ' ')
    print ()
```

```
for i in range (1,6):
    for j in range (1, i):
        print (' ', end="")

    for j in range (1, 7 - i):
        if (j == 1 or i + j == 6):
            print ('*', end = ' ')
        else:
            print (' ', end = ' ')
    print ()
```

**#b.**

```
for i in range (1,6):
    for j in range (1, i+1):
        print ('*', end=' ')
    print ()
```

```
for i in range (1,6):
    for j in range(1,6-i):
        print ('*', end=' ')
    print ()
```

**#c.**

```
for i in range (1,6):
    for j in range (1, i+1):
        if (i == 5 or j == 1 or i == j):
            print (j , end=' ')
        else:
            print (' ', end=' ')
    print ()
```

**#d.**

```
n = 5
for i in range (1, n + 1):
    print (" " * (n - i), end=' ')

    for j in range (i, 2 * i):
        print (j, end=' ')

    for j in range (2 * i - 2, i - 1, -1):
        print (j, end=' ')
    print ()
```

**#e.**

```
for i in range (1,6):
    for j in range (1, i+1):
        if (i == 5 or j == 1 or i == j):
            print (j , end=' ')
        else:
            print (' ', end=' ')
    print ()
```

**#f.**

```
for i in range (1, 6):
    for j in range (i, 6):
        if (i == 1 or j == 5 or i == j):
            print (j, end=' ')
        else:
            print (' ', end=' ')
    print ()
```

**#g.**

```
n = 5
for i in range (1, n + 1):
    print (" " * (n - i), end = ' ')

    for j in range (1, i + 1):
        print (j, end = ' ')

    for j in range (i - 1, 0, -1):
        print (j, end = ' ')
    print ()
```

**#h.**

```
for i in range (1, 6):
    for j in range (1, i + 1):
        print (j, end=' ')

    for j in range (1, 6 - i):
        print (' ', end=' ')

    for j in range (1, 5 - i):
        print (' ', end=' ')

    for j in range (i, 0, -1):
        if (j == 5):
            print ("", end = "")
        else:
            print (j, end=' ')
    print ()
```

