

QUESTION 1

In [4]:

```
rows = 5

num = rowsa

for i in range(rows, 0, -1):

    for j in range(0, i):

        print(num, end=" ")

    print("\r")

5 5 5 5 5
5 5 5 5
5 5 5
5 5
5
```

QUESTION 2

In [7]:

```
rows = 5

for i in range(rows, 0, -1):

    for j in range(0, i + 1):

        print(j, end=" ")

    print("\r")

0 1 2 3 4 5
0 1 2 3 4
0 1 2 3
0 1 2
0 1
```

QUESTION 3

In [9]:

```
rows = 5

i = 1

while i <= rows:

    j = 1

    while j <= i:

        print((i * 2-1), end=" ")

        j = j + 1

    i = i + 1

    print()
```

```

1
3 3
5 5 5
7 7 7 7
9 9 9 9 9

```

QUESTION 4

In [11]:

```

rows = 6

for row in range(1, rows):

    for column in range(row, 0, -1):

        print(column, end=" ")

    print("")

```

```

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

```

QUESTION 5

In [13]:

```

start = 1
stop = 2
currentNumber = stop
for row in range(2, 6):
    for col in range(start, stop):
        currentNumber -= 1
        print(currentNumber, end=" ")
    print(" ")
    start = stop
    stop += row
    currentNumber = stop

```

```

1
3 2
6 5 4
10 9 8 7

```

QUESTION 6

In [20]:

```

def printPascal(n) :
    for line in range(0, n) :
        for i in range(0, line + 1) :
            print(binomialCoeff(line, i)," ", end = "")
        print()

def binomialCoeff(n, k) :
    res = 1
    if (k > n - k) :
        k = n - k
    for i in range(0 , k) :
        res = res * (n - i)
        res = res // (i + 1)

    return res

n=7
printPascal(n)

```

```

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1

```

QUESTION 7

In [65]:

```

rows = 5
for i in range(1, rows + 1):
    for j in range(1, rows + 1):
        if j <= i:
            print(i, end=' ')
        else:
            print(j, end=' ')
    print()

```

```

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

```

QUESTION 8

In [44]:

```

lines=8
i=1
j=1
while i<=lines:
    j=1
    while j<=i:
        temp=i*j
        print(temp, end='')
        print(" ", end='')
        j+=1;
    print("");
    i+=1;

```

```

1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
6 12 18 24 30 36
7 14 21 28 35 42 49
8 16 24 32 40 48 56 64

```

QUESTION 9

In [46]:

```

rows = 5

k = 2 * rows-2

for i in range(rows, -1, -1):

    for j in range(k, 0, -1):

        print(end=" ")

    k = k + 1

    for j in range(0, i + 1):

        print("**", end=" ")

```

```

print(" ")

* * * * *
 * * * *
  * * *
   * *
    *

```

QUESTION 10

In [56]:

```

size = 7
m = (2 * size)-2
for i in range(0, size):
    for j in range(0, m):
        print(end=" ")
    m = m-1
    for j in range(0, i + 1):
        print("*", end=" ")
    print(" ")

```

```

      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * *
* * * * *

```

QUESTION 11

In [57]:

```

rows = 6
for i in range(0, rows):
    for j in range(0, i + 1):
        print("*", end=' ')
    print(" ")

print(" ")

for i in range(rows + 1, 0, -1):
    for j in range(0, i - 1):
        print("*", end=' ')
    print(" ")

```

```

*
* *
* * *
* * * *
* * * * *
* * * * *

* * * * *
* * * * *
* * * *
* * *
* *
*

```

QUESTION 12

In [58]:

```

rows = 5
for i in range(0, rows):
    for j in range(0, i + 1):
        print("*", end=' ')
    print("\r")

```

```

for i in range(rows, 0, -1):
    for j in range(0, i - 1):
        print("*", end=' ')
    print("\r")

```

```

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

```

QUESTION 13

In [59]:

```

rows = 5
i = 1
while i <= rows:
    j = i
    while j < rows:
        print(' ', end=' ')
        j += 1
    k = 1
    while k <= i:
        print('*', end=' ')
        k += 1
    print()
    i += 1

```

```

i = rows
while i >= 1:
    j = i
    while j <= rows:
        print(' ', end=' ')
        j += 1
    k = 1
    while k < i:
        print('*', end=' ')
        k += 1
    print('')
    i -= 1

```

```

      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * *
* * * * *
 * * * *
  * * *
   * *
    *

```

QUESTION 14

In [63]:

```

rows = 5
i = 0
while i <= rows - 1:
    j = 0
    while j < i:
        print('', end=' ')
        j += 1
    k = i
    while k <= rows - 1:
        print('*', end=' ')
        k += 1
    print()

```

```

        i += 1

i = rows - 1
while i >= 0:
    j = 0
    while j < i:
        print(' ', end=' ')
        j += 1
    k = i
    while k <= rows - 1:
        print('*', end=' ')
        k += 1
    print('')
    i -= 1

```

```

* * * * *
* * * *
* * *
* *
*
*
* *
* * *
* * * *
* * * * *

```

QUESTION 15

```

rows = 14
print("'" * rows, end="\n")
i = (rows // 2) - 1
j = 2
while i != 0:
    while j <= (rows - 2):
        print("'" * i, end="")
        print("_" * j, end="")
        print("'" * i, end="\n")
        i = i - 1
        j = j + 2

```

```

*****
***** _ *****
***** _ *****
**** _ ****
*** _ ***
** _ **
* _ *

```

In [64]:

In []:

In []: