**Question 1**

Write a program to print the following pattern

1

2\*2

3\*3\*3

4\*4\*4\*4

**Answer:**

n = 4  
  
for i in range(n):  
 for j in range(n):  
 if i >= j:  
 print(i, end=" ")  
 print()

**Question 2**

Write a program to print the following pattern

1

01

101

0101

10101

**Answer:**

n = 5  
  
for i in range(n):  
 for j in range(n):  
 if i >= j:  
 if (i+j) % 2 == 0:  
 print(1, end=" ")  
 else:  
 print(0, end=" ")  
 print()

**Question 3**

Write the similarity and difference between an array name and a pointer variable.

**Answer:**

Similarity-

|  |  |
| --- | --- |
| An array name | A pointer variable |
| An array name points towards the first element of the array which holds address of first element | a variable that stores the address of another variable |

Difference-

|  |  |
| --- | --- |
| An array name | A pointer variable |
| Array name is static in nature because it always points to the first element of the array. | pointers are dynamic in nature, which means the memory allocated can be resized later |