1. What is the value of x

x = 0

while (x < 100):

x+=2

print(x)

1. 101
2. 99
3. None of the above, this is an infinite loop
4. 100

Ans: 100

1. Using while loop accept numbers until the sum of number is less than 100.

sum\_of\_numbers = 0

while sum\_of\_numbers < 100:

    num = float(input("Enter a number: "))

    sum\_of\_numbers += num

print("Sum of numbers exceeded 100. Final sum:", sum\_of\_numbers)

1. Take 10 integers from keyboard using loop and print their average value on the screen.

**CODE:**

total = 0

for i in range(10):

    num = int(input("Enter an integer: "))

    total += num

average = total / 10

print("The average value of the 10 integers is:", average)

1. Print the following patterns using loop :  
   a.  
   \*  
   \*\*  
   \*\*\*  
   \*\*\*\*

row =4

for i in range(1,row+1):

  for j in range(1, i+1):

    print("\*",end="")

  print()

b.  
   \*    
 \*\*\*   
\*\*\*\*\*  
 \*\*\*   
   \*

# Upper part of the pattern

for i in range(1, rows + 1, 2):

    # Print spaces before stars

    print(" " \* ((rows - i) // 2), end="")

    # Print stars

    print("\*" \* i, end="")

    print()

# Lower part of the pattern

for i in range(rows - 2, 0, -2):

    # Print spaces before stars

    print(" " \* ((rows - i) // 2), end="")

    # Print stars

    print("\*" \* i, end="")

    print()

c.  
1010101  
 10101   
  101    
   1

def print\_pattern(n):

    for i in range(n):

        print(" " \* i, end="")

        for j in range(n - i):

            print("1", end="")

            if j < n - i - 1:

                print("0", end="")

        print()

print\_pattern(4)

1. Print multiplication table of given number

For example num = 2 so the output should be

2

4

6

8

10

12

14

16

18

20

**CODE:**

num = 2

for i in range(1, 11):

    print(num \* i)

1. Given a list iterate it and display numbers which are divisible by 5 and if you find number greater than 150 stop the loop iteration

list1 = [12, 15, 32, 42, 55, 75, 122, 132, 150, 180, 200]

**Expected output:**

15

55

75

150

**CODE:**

list1 = [12, 15, 32, 42, 55, 75, 122, 132, 150, 180, 200]

for num in list1:

    if num > 150:

        break

    if num % 5 == 0:

        print(num)

7)Given a number count the total number of digits in a number

For example, the number is **75869**, so the output should be **5**.

**CODE:**

number = int(input("Enter a number: "))

num\_digits = len(str(number))

print("Total number of digits:", num\_digits)

8)Display -10 to -1 using for loop

**Expected output:**

-10

-9

-8

-7

-6

-5

-4

-3

-2

-1

**CODE:**

for i in range(-10,0):

  print(i)

9)Display a message “Done” after successful execution of for loop

For example, the following loop will execute without any error.

for i in range(5):

print(i)

**Expected output should be:**

0

1

2

3

4

Done!

**CODE:**

for i in range(5):

print(i)

print("Done!")

1. Print the following pattern using nested for loop

Expected output

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

**CODE:**

for i in range(5, 0, -1):

    for j in range(i, 0, -1):

        print(j, end=" ")

    print()

s