Question No.1

```
x = int(input("Enter the number: "))

print("First loop:")
for n in range(0, x):
    print(f"Iteration {n} , n = {n}, id(n) = {id(n)}")
    n += 1
    print(f"After increment , n = {n}, id(n) = {id(n)}")
    print("*" * (0 + n))
print("Second loop:")
for n in range(-x, 0):
    print(f"Iteration {n} , n = {n}, id(n) = {id(n)}")
    n += 1
    print(f"After increment , n = {n}, id(n) = {id(n)}")
    print("*" * (0 - n + 1))

# Output:

First loop:
Iteration 0 , n = 0, id(n) = 140718988196248
After increment , n = 1, id(n) = 140718988196280
*
Iteration 1 , n = 1, id(n) = 140718988196280
After increment , n = 2, id(n) = 140718988196312
**
Iteration 2 , n = 2, id(n) = 140718988196312
After increment , n = 3, id(n) = 140718988196344
***
Iteration 3 , n = 3, id(n) = 140718988196344
After increment , n = 4, id(n) = 140718988196376
****
Iteration 4 , n = 4, id(n) = 140718988196376
After increment , n = 5, id(n) = 140718988196408
*****
Second loop:
Iteration -5 , n = -5, id(n) = 140718988196088
After increment , n = -4, id(n) = 140718988196120
*****
Iteration -4 , n = -4, id(n) = 140718988196120
After increment , n = -3, id(n) = 140718988196152
****
Iteration -3 , n = -3, id(n) = 140718988196152
After increment , n = -2, id(n) = 140718988196184
***
Iteration -2 , n = -2, id(n) = 140718988196184
After increment , n = -1, id(n) = 140718988196216
**
Iteration -1 , n = -1, id(n) = 140718988196216
After increment , n = 0, id(n) = 140718988196248
*
```

Question No.2

```
dic1 = {1: 10, 2: 20}
dic2 = {3: 30, 4: 40}
dic3 = {5: 50, 6: 60}
print("ID of Dict_1:",id(dic1))
concat_dict = dic1 | dic2 | dic3

print("Concat_Dict: ",concat_dict)
print("ID: ",id(concat_dict))


# Output:

ID of Dict_1: 2339821493376
Concat_Dict:  {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
ID:  2339843122432
```

Question No.3

```
l = [1,2,3,4,5,1,2,3,8,9,10]
print(f"Address of list before removal of duplicates: {id(l)}")

# Removing duplicates from list
s = set(l)  # As we know set doesn't allow duplicates
l = list(s) # Converting set back to list

print(f"Address of list after removal of duplicates: {id(l)}")


# Output:

Address of list before removal of duplicates: 2339843172736
Address of list after removal of duplicates: 2339843191808
```

Question No. 4

```
list_2 = [1,2,3,4,5,6,7,("I am Tuple",),8,9,10]
counter = 0
for i in list_2:
    if(isinstance(i,tuple)):
        print("Id of tuple is:",id(i))
        break
    counter +=1
print("Element before tuple are: ", counter)
print("Id of list is:",id(list_2))


# Output:

Id of tuple is: 2339842950960
Element before tuple are:  7
Id of list is: 2339843117440
```