Q no 1

```
list1 = []
n = int(input("Enter the number of elements in list 1: "))
for i in range(n):
    elem = int(input("Enter element " + str(i+1) + ": "))
    list1.append(elem)


list2 = []
m = int(input("Enter the number of elements in list 2: "))
for i in range(m):
    elem = int(input("Enter element " + str(i+1) + ": "))
    list2.append(elem)

merged_list = list1 + list2
sorted_list = sorted(merged_list)
print("Merged and sorted list:", sorted_list)
```

```
    Enter the number of elements in list 1: 1
    Enter element 1: 1
    Enter the number of elements in list 2: 3
    Enter element 1: 2
    Enter element 2: 3
    Enter element 3: 4
    Merged and sorted list: [1, 2, 3, 4]
```

Q NO 2

```
myList1=[]
for i in range(5):
  val=input("Enter values of first List:")
  n=int(val)
  myList1.append(n)
  print(myList1)
myList2=[]
for i in range(5):
  val=input("Enter value of 2nd List")
  n=int(val)
  myList2.append(n)
  print(myList2)
  myList3=myList1+myList2
  myList3.sort()
small=min(myList3)
large=max(myList3)
print("Small Number is:")
print("Large Number is:")
```

```
    Enter values of first List:1
    [1]
    Enter values of first List:1
    [1, 1]
    Enter values of first List:2
```

q NO 3

```
from math import *
h = 0.001
x = [i*0.001 for i in range(-int(pi/0.001), int(pi/0.001)+1)]

for i in range(len(x)):
```

```
num = sin(x[i]+h) - sin(x[i])
deriv = num / h
true_deriv = cos(x[i])
print(f"x = {x[i]:.3f}: Approx. Deriv. = {deriv:.3f}, True
```

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3m 20s   completed at 11:13 PM