1. Write a program using loop to merge two sorted list. The merged list should be in the sorted order.

2. Write a program (using loops!) that asks the user for a long string containing multiple words. Print back to the user the same string, except with the words in backwards order. Note that it is different from just reversing the string.

For example, say I type the string:

My name **is** XYZ

Then:

XYZ **is** name My

should be shown back to me.

3. Return the sum of the numbers in the array, except ignore sections of numbers starting with a 6 and extending to the next 7 (every 6 will be followed by at least one 7). Return 0 for no numbers.

Examples:

Input	Output
[1, 2, 2]	5
[1, 2, 2, 6, 99, 99, 7]	5
[1, 1, 6, 7, 2]	4
[1, 1, 6, 7, 2, 6, 7, 5]	9

4. Write a python program to find the prime factors of any number. For example, the prime factor of 20 is 2,2,5 such that $2\times2\times5=20$.

5. A lucky number is one whose individual digits add up to 7, in successive additions. For example, 62431 is a lucky number (6 + 2 + 4 + 3 + 1 = 16, 1 + 6 = 7). Write a python program to check whether a given number is lucky number or not.

6. Write a python program using while loop to generate the following output:

0

1 0

2 1 0

3 2 1 0

4 3 2 1 0

5 4 3 2 1 0

6 5 4 3 2 1 0

7 6 5 4 3 2 1 0

8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

7. Write a python program to display the first *n* powers of any number *k* using anonymous/lambda function.