Question-1:

Problem Statement :

After JEE Mains, some students got admission into an engineering college. Now there is a class consisting of such n students, and the HOD came to say it is time to select the class monitor. But He never gets all of them at one time. So he brought a register, every time he gets someone with less rank than the previous time he cut the name and wrote the name of the student and the rank.
For a given number of ranks he gets each time, you have to predict how many names are cut in the list.

Constraints:
Number of Visiting<=10^9
ranks <=10000

Input Format:
Number of Visiting N in their first line
N space separated ranks the HOD gets each time

Output Format:
Number of ranks cut in the list

Sample Input:
6
4 3 7 2 6 1

Sample Output:
3

Code:

```
n = int(input())

a = list(map(int, input().split()))
```

```
m = a[0]

ans = 0

for i in range(1, n):

    if a[i] < m:

        m = a[i]

        ans += 1

print(ans)
```

Question-2:

Problem Statement :

Ratul made a linked list, a list made of n nodes, where every node has two variables, the velocity and the mass of a particle.
Since all the particles have the velocity in the same direction, find the total momentum of the entity made by the particles from the linked list.

Constraints :
1<=n<=10000
1<=m,v<=100
Input format:
First line containing n, number of nodes
Then n lines containing the mass and the velocity space separated.
Output Format:
Single integer denoting the momentum

Sample Input:
4
1 3
2 4

2 3

4 5

Sample Output:

37

Code:

```
n = int(input())

s = 0

for i in range(n):

    m, v = map(int, input().split())

    s += m * v

print(s)
```

Question-3:

How can a number be expressed as a sum of two prime numbers? Write a Program.

Code:

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

found = False

for i in range(2, number):

    prime1 = True

    for j in range(2, int(i**0.5) + 1):
```

```
        if i % j == 0:
            prime1 = False
            break
    prime2 = True
    for j in range(2, int((number - i)**0.5) + 1):
        if (number - i) % j == 0:
            prime2 = False
            break
    if prime1 and prime2:
        print(f"{number} can be expressed as {i} + {number - i}")
        found = True
        break
if not found:
    print(f"{number} cannot be expressed as the sum of two prime numbers.")
```

Question-4:

Rahul is known for copying in exams from his adjacent students, but he’s smart about it. Instead of directly copying the words, he changes the positions of letters while keeping the letters constant. As the examiner, you need to determine if Rahul has copied a certain word from the adjacent student who is giving the same exam. You should provide Rahul with the appropriate markings based on your findings.

Note: Uppercase and lowercase letters are considered the same.

Input Format:

The first line contains the word of the adjacent student.

The second line contains Rahul’s words.

Output Format:

0 if Rahul did not copy.

1 if Rahul copied.

Constraints:

1 <= Length of string <= 10^6

Answer:

Sample Input:

HELLO

EHLLO

Output: 1

Code:

```
adjacent_word = input()

rahul_word = input()

if sorted(adjacent_word.lower()) == sorted(rahul_word.lower()):

    print(1)
```

```
else:
        print(0)
```

Question-5:

You are given an array, and you need to choose a contiguous subarray of length ‘k’. Then, find the minimum value within that subarray and return the maximum of those minimum values.

Code:

```
k, n = map(int, input().split())
arr = list(map(int, input().split()))
max_min = float('-inf')
for i in range(n - k + 1):
    min_val = min(arr[i:i + k])
    max_min = max(max_min, min_val)
print(max_min)
```