Problem A
Lalbagh Fort, Dhaka

"Lalbagh Fort (also Fort Aurangabad) is an incomplete 17th century Mughal fort complex that stands before the Buriganga River in the southwestern part of Dhaka, Bangladesh. The construction was started in 1678 AD by Mughal Subahdar Muhammad Azam Shah who was son of Emperor Aurangzeb and later emperor himself. His successor, Shaista Khan, did not continue the work, though he stayed in Dhaka up to 1688. Mughal prince Muhammad Azam, third son of Aurangzeb started the work of the fort in 1678 during his viceroyalty in Bengal. He stayed in Bengal for 15 months. The fort remained incomplete when he was called away by his father Aurangzeb. Shaista Khan was the new subahdar of Dhaka in that time, and he did not complete the fort. In 1684, the daughter of Shaista Khan named Iran Dukht Pari Bibi died there. After her death, he started to think the fort as unlucky, and left the structure incomplete. Among the three major parts of Lalbagh Fort, one is the tomb of Pari Bibi. After Shaista Khan left Dhaka, it lost its popularity. The main cause was that the capital was moved from Dhaka to Murshidabad. After the end of the royal Mughal period, the fort became abandoned. In 1844, the area acquired its name as Lalbagh replacing Aurangabad, and the fort became Lalbagh Fort."

Above text is a part of the **Lalbagh Fort** wikipedia page.
(https://en.wikipedia.org/wiki/Lalbagh_Fort)

Now for this problem you have to find out the year when Aurangabad was replaced by Lalbagh and Aurangabad Fort became Lalbagh Fort.

Input
This problem has no input.

Output
One line of output, which is a year when Aurangabad acquired its name Lalbagh.

Sample Input
(no input)

Problem B
Master Shifu is going to Am-merica

You know very well **Master Shifu** and **Monkey** from famous animation movie **Kung Fu Panda**. Master Shifu is going to the USA to visit his old friend. Before starting journey Master Shifu wants to know all the buses departure time of the valley. All the buses of the valley leave the valley after 10 minutes of arrival to the city. Monkey is assigned to report all the buses arrival time of the valley to Master Shifu. So Monkey started working.

When Monkey came with the report, Master Shifu saw that Monkey has written all the time in minutes. But Master Shifu doesn't have much time in his hand to convert all the buses arrival time in **HH: MM** format and count the number of buses leave the city within a fixed time. Now Master Shifu wants you to do this as you are the best programmer of the valley.

Input

There will be **T** test cases (1<T<100). For each test case you will be given an integer **N** on the first line. On the second line there will be N positive integer a_1, a_2, a_3, a_4.......a_N, those denotes the buses arrival time to the valley in minutes and no number is greater than **1440**. On next line there will be a time in **HH:MM** format given but Master Shifu, Where **HH** represents hour and **MM** represents minute. (Master Shifu gives time accordingly 24 hours clock system)

Output

For each test case you have print one single integer, the number of buses arrived to the valley within the given time by Master Shifu.

while(k---)

Sample Input	Sample Output
2	2
3	3
120	
125	
50	
02:00	
4	
70	
80	
90	
110	
01:40	

Problem C
String Challenge !!!

Haimonti and **Charulata** are two sisters. They are very good at mathematics. Haimonti is studying in Computer Science and Charulata is studying in Computer Science and Engineering. They both are equally good in programming. They are also participating in National Girls Programming Contest 2017 together in a team. As the part of their preparation, they were practicing one afternoon. Suddenly a problem came on Haimonti's mind and she challenged Charulata to solve this.

Haimanti will be given a string **S** and two numbers **L** and **R** which are the indices of the string. Charulata has to find the highest occurred character between L and R in the given string.

Now Charulata is a little bit confused about the problem and she came to you for help.

Input

There will be **T** test cases ($1 <= T <= 100$). For each test case, there will be a string S ($1 <= |S| <= 10^5$) on the first line. String will contain only lowercase English letter. On next line there will be a positive integer Q ($1 <= Q <= 10^5$), the number of query. Then Q line follows each containing two number L and R ($1 <= L <= R <= |S|$). **Here, |S| means the length of the string.**

Output

For each test case print "**Case #T:**" on the first line, where **T** is the number of test case. From next line there will be Q line of output. For each query there will be a character on each line whose occurrence is maximum within **L** and **R** (inclusive). If there are multiple character with same number of occurrence, print the one which is lexicographically smallest.

Sample Input	Sample Output
2 aabcdefaabbcccdd 2 1 3 7 14 bddcceaaazxcnm 2 2 8 10 14	Case #1: a c Case #2: a c

Problem D
Panda and Tigress

You definitely know **Panda** who lives in *Valley of Peace*. The Valley has different parts and after the last fight, 5 warriors and Panda started living in different parts of the valley of Peace. Different part of the Valley of Peace is connected with a lot of one-way and two-way roads. Every road has a fixed length in Kilometers and to go to another part of the valley, Panda has to use multiple different roads as sometimes there is no direct way to go to one part of the valley from another part. The valley has N parts in total. All the parts of the valley are numbered from 1 to N. Now Panda wants to visit one of his best friend Tigress who lives on a different part of the valley and come back home safely.

Panda has left training since a long time ago and very lazy nowadays, he wants to know minimum how many kilometers he has to walk to visit his friend Tigress and came back home. As a programmer friend of Panda, you have to tell, minimum how many kilometer Panda has to travel to visit Tigress and come back home.

Input
There will be T test cases. In each test case there will be an integer N on the first line. After that there will be N line of input each contains three positive integer U, V and K. which describe a road from U to V and the road is K kilometers long. After that you will be given two number P and G ($1<=P$, $T<=N$). Panda lives in the P part of the valley and Tigris lives in G part. It is not guaranteed that the length of road U to V is equal to the length of road V to U.

Output
For each test case you have to print "Case #T: X", where T is the number of test case and X is the minimum amount of Kilometers Panda has to walk to meet his friend Tigress and came back home safely.

Sample Input	Sample Output
2 5 1 2 1 2 3 2 2 4 3 2 1 1 3 2 2 1 3. 6 1 2 1 2 3 2 3 4 3 4 3 3 3 2 2 2 1 1 1 4	Case #1: 6 Case #2: 12

Problem E
Prime Digit

You will be given two numbers **A** and **B**. You have to find out the number of prime numbers between A and B, which contains only prime digit (that means only **2,3,5,7**).

Input
There will be a positive integer **T** ($1 <= T <= 10^4$)on first line, which denotes the number of test case. For each test case you will be given two space separated numbers **A** and **B** ($1 <= A <= B <= 2*10^8$).

Output
For each test case you have to print "**Case #T: N**", where **T** is the number of test case and **N** is the count of numbers between **A** and **B** (inclusive) with prime digits only.

Sample Input	Sample Output
2 1 10 10 25	Case #1: 4 Case #2: 1

Suniv and Taniv

Suniv recently learned about deques. Now he wants to solve problems using deques, but his brother Taniv tells him that deques aren't very useful. He tells Suniv that if we want to know how many numbers in the deque lie within a range, we have to use something like a set. But Suniv likes deques, so he convinces Taniv that they should create a new data structure together that can answer how many numbers in the data structure lie within a range and also act like a deque. Help them solve this problem.

Initially you are given an empty list and you have to perform Q operations on the list:

1 v – Add x to the start of the list

2 v – Add x to the end of the list

3 – Remove the first element of the list

4 – Remove the last element of the list

5 L R X Y – Return the number of Elements between L and R (inclusive) that are greater or equal to X and less than or equal to Y i.e. $L<=i<=R$ and $X<=a_i<=Y$.

Constraints:
$1<=T<=15$
$1<=Q<=2*10^5$
$1<=a_i<=2*10^5$
$1<=L<=R<=Size of List$

No invalid operations will be given i.e. operations of type 3 and 4 will not be given if the list if empty.

Input

The first Line contains T, the number of test cases. Each test case starts with Q, the number of queries followed by Q operations on the next Q lines.

Output

Output the answer for each query of type 5 on a separate line.

Sample Input
```
2
6
1 3
2 3
2 1
1 4
3
5 1 3 2 4
6
1 1
1 2
5 1 2 1 1
2 3
3
5 1 2 1 10
```


Sample Output
```
2
1
```

After completing B. Sc. in Computer Science and Engineering you have got an online interview call from Google as Intern Software Engineer Position. After successfully passing the online interview Google called you on their Main Campus **Googleplex** for an onsite technical interview. As they start from easier problem. On the first technical interview, interviewer has given you an unsorted array of integer numbers and told to find out a number from this array such that all numbers on left side of the array are smaller and all the numbers on the right side are greater. If there are multiple such numbers, then answer the leftmost one.

As Internship at Google is very desired position, you have to solve it.

Input

There will be a positive integer T ($1 <= T <= 250$). on first line, which denotes the number of test cases. For each test case there will be two lines of input. On first line there will be a single positive integer N ($3 <= N <= 10^5$). On second line there will be N space separated unsorted distinct numbers not greater than 10^{14}.

Output

For each test case you have to print one line of output "**Case #T: X**", where T is the number of test case and X is the desired result. X could not be the first or last number of the given sequence. If X is not found with above constraints then print "**Not Found**".

Sample Input	Sample Output
3 5 3 2 4 6 5 7 2 8 4 9 11 14 13 5 7 9 8 4 3	Case #1: 4 Case #2: 9 Case #3: Not Found

9   3   8 7

1 - 5

2 2 4 8 11 14 13

9

3

m = 9
m = 9
m = 11
Aus = 9