UVa Online Judge

12776 Query for Divisor-free Numbers

You are given an array of N integers: A_1, A_2, ..., A_N. You have to process Q queries on this array, where a query will be a pair of integers (L, R).

For each query, you have to find the count of Divisor-free numbers in the number sequence S, where $S = A_L, A_{L+1}, \ldots, A_R$. A number A_i from the sequence S will be called Divisor-free if there is no A_j $(i \neq j)$ in S such that A_j is a divisor A_i.

Input

The first line of the input contains an integer T $(T \leq 5)$ denoting the number of test cases. The first line of each test case contains two integers N and Q $(1 \leq N, Q \leq 10^5)$. The following line contains N space separated integers A_1, A_2, ..., A_N where $1 \leq A_i \leq 10^6$. In each of the next Q lines, there will be two integers (L, R) representing a query $(1 \leq L \leq R \leq N)$.

Output

For each test case, print the case number in the format '`Case` X`:`' (here, X is the serial of the test case). Then print Q lines containing the answer for each query.

Sample Input

```
2
10 5
4 6 2 7 5 11 14 21 13 2
2 6
4 8
2 8
3 7
4 9
5 3
4 6 8 1 5
1 5
2 3
3 3
```

Sample Output

```
Case 1:
4
3
4
4
4
Case 2:
1
2
1
```