Almost Prime Numbers Again

Almost Prime Numbers are composite numbers which are not divisible by certain prime numbers. Given K prime numbers and an integer N, find out the number of Almost Prime Numbers (ie. composite numbers not divisible by any of the given K prime numbers) that are not greater than N.

Input

First line of input consists of an integer **T (1<=T<=1000)**, denoting the number of test cases. Then **T** test cases follow. Each case begins with a line containing two integers **N (0<=N<=10^6)** and **K (1<=K<=10)**. The next line contains **K** space separated prime numbers. All the prime numbers are guaranteed to be **less than 50**.

Output

For each test case, output a single line in the format **Case X: Y**, where **X** denotes the test case number and **Y** denotes the number of Almost Prime Numbers that are not greater than N.

Example

Input:
```
2
1000 3
2 3 5
49 3
2 3 5
```

Output:
```
Case 1: 100
Case 2: 1
```