

Almost Prime Numbers

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 ($1 \leq T \leq 100$), denoting the number of test cases. Then T test cases follow. Each case begins with a line containing two integers N ($0 \leq N \leq 10^4$) and K ($1 \leq K \leq 5$). 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
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