3087   School Lunch

A large city has n schools run by the municipal corporation with varying number of children studying in them. Recently it was made compulsory for all schools to provide lunch (exactly m grams of rice-curry mix) everyday to all the students present that day in school. To maintain high level of hygiene, meals would be packed in packs of various weights at the **cooking centre** and some combination of packages of different weights would be delivered to each school by a **contractor**. No opened packs are allowed in transit. These packs would be opened only in the school premises and the food distributed amongst the children. Any extra food delivered to a school is considered waste.

The contractor charges D Rupees (Rs.) per pack as delivery charges. The cost of preparation of 1 kilogram of cooked meal is C Rs.

Assuming no limits on the amount of food or number of packs that can be cooked and transported, the cooking center wishes to optimize the total cost of operations under the following conditions.

1. If the cost of food going waste and the additional delivery charge being paid to the contractor to prevent it are the same, then food wastage must be avoided.

2. Subject to the above condition, the contractor would prefer to send smaller packs. So if each possible solution is arranged as a sequence of numbers in the order of increasing pack weights, the contractor would prefer the lexicographically maximum sequence.

Your job is to create a computer program to do this optimization.

Input

The input contains several test cases and the first line of input gives the number of test cases. For each test case, the first line contains 5 numbers:

$n \leq 1000$, the number of schools;
$k \leq 10$, the number of different weights of food packs;
$m \leq 500$, the grams of food to be given to each student;
$D \leq 100$, the delivery charge per pack;
$C \leq 100$, the cost of preparing 1 kilogram of food.

All quantities are positive integers and separated by a single space.

The next line contains k integers denoting the different possible weights (in kilograms) of packs, separated by a space. The maximum possible weight is 25 kilograms and the weights may be given in any order.

The next line contains n integers separated by a space. The i-th number denotes the number of children in school i. The maximum number of children in a school is 10000.

Output

The output for each test case should give for each school (starting from School 0 to School $n-1$), the number of packs of each weight to be distributed, in increasing order of weights. The output for each school should be printed on one line with a single space separating the values. The outputs for different test cases should be printed successively.

Sample Input

```
1
2 2 200 20 30
7 3
100 500
```

Sample Output

```
School 0 : 2 2
School 1 : 3 13
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