

Kindergarten Playsets

Filename: playset

Bobby is a toy manufacturer who makes playsets for children. This week, n kindergarten teachers ordered a playset from him. Due to limitations on his machine, Bobby may only manufacture playsets with x toys, such that $1 \leq x \leq m$, and he must choose the same x for all teachers. Bobby quickly realized that this may mean that he cannot satisfy all the teachers orders, since each teacher wants to be able to divide the toys evenly among the children in their classroom. He began wondering, what is the maximum number of teachers he can satisfy, and how many unique values of x achieve this goal?

The Problem:

Determine the maximum number of teachers that can be satisfied and the number of ways in which this can be done.

The Input:

The first line of the input file begins with a single, positive integer, t , representing the number of weeks. For each week, two lines follow.

The first contains two integers $1 \leq n, m \leq 1000$, representing the number of kindergarten teachers and the maximum number of toys that can be in a playset. The second line consists of n space separated integers, $1 \leq a_i \leq 1000$, denoting the number of children in each classroom.

The Output:

For each test case, output a single line saying “Week # i : c w ” without the quotes, where i is the number of the week, c is the maximum number of teachers satisfied and w is the number of ways to satisfy c teachers.

Sample Input:

```
3
5 25
10 3 5 7 20
3 100
20 25 15
2 10
20 35
```

Sample Output:

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Week #1: 3 1
Week #2: 2 3
Week #3: 0 10
```

Note: In the second test case, it is possible to have a playset with 60 toys (divisible by 20 and 15), 75 toys (divisible by 25 and 15), or 100 toys (divisible by 25 and 20). It is impossible to satisfy all three teachers since we can make at most 100 toys.

In the third test case, any playset of size 1 through 10 can be made. However, this does not satisfy the teachers.