New Deal

Filename: `newdeal`

The Problem

Deal or No Deal has had its run on television and FOX has decided that they'd like to come up with a different show, *New Deal,* to compete with it. In this show, there are a certain number of boxes, each with a different dollar amount, but the added twist is that some boxes have a "negative" amount of cash meaning that if you pick that box, you actually OWE the *New Deal* producers some money. In the show, you can pick any subset of boxes and the amount of money you get is the sum of the money in the boxes, including the negative amounts. Luckily, the show is arranged such that most subsets of boxes you could choose have more positive money than negative money.

The one final twist in the show is that if you can hit a particular dollar amount exactly, you are rewarded with **ten million dollars.**

You decide that you want to get on the show and by writing a computer program you'll be able to win the ten million dollars!

The Input

The first line of the input file will contain a single integer, n, representing the number of test cases. Each test case will be on a line by itself, on the following n lines. The first number on each of these lines will be a single positive integer, k $(0 < k < 100)$, representing the number of boxes used in this test case. This will be followed by k non-zero integers representing the dollar values for each box. You are guaranteed that the sum of the absolute values of the dollar amounts in each test case will not exceed 1000000. The last value on each line will be a positive integer, T, representing that exact dollar amount you are trying to hit.

The Output

For each test case, output a single line with one of the two following formats:

```
Test case #m: You can hit the target T and win $10M!
Test case #m: You can not hit the target T, sorry!
```

where m is the number of the test case (in between 1 and n, inclusive) and T is the target dollar value given in the test case. The first format is printed if some subset of the values within the corresponding boxes adds up to the target amount for that case. Otherwise, print using the second format.

Sample Input

```
2
5 2 3 4 -1 -2 1
6 1 2 3 4 5 6 30
```

Sample Output

```
Test case #1: You can hit the target 1 and win $10M!
Test case #2: You can not hit the target 30, sorry!
```