Problem C. C

Time limit 1000 ms
Mem limit 65536 kB

In a strange shop there are n types of coins of value $A_1, A_2 \dots A_n$. $C_1, C_2, \dots C_n$ denote the number of coins of value $A_1, A_2 \dots A_n$ respectively. You have to find the number of different values (from 1 to m), which can be produced using these coins.

Input

Input starts with an integer T (≤ 20), denoting the number of test cases.

Each case starts with a line containing two integers n ($1 \leq n \leq 100$), m ($0 \leq m \leq 10^5$). The next line contains $2n$ integers, denoting $A_1, A_2 \dots A_n, C_1, C_2 \dots C_n$ ($1 \leq A_i \leq 10^5, 1 \leq C_i \leq 1000$). All A_i will be distinct.

Output

For each case, print the case number and the result.

Sample

Input	Output
2 3 10 1 2 4 2 1 1 2 5 1 4 2 1	Case 1: 8 Case 2: 4