Bear Sums

Time limit: *9000 ms*
Memory limit: *256 MB*

Mitsos the bear is challenging his brother Vangelis with a mathematical task. Mitsos provides a list of integers L and another integer value S, then he asks Vangelis to check if there are any two items in the list L whose sum is equal to the integer S.

Since Vangelis is a confident engineer, he decided to write a program that would do all the computations for him and skip the trouble of thinking. Your task is to help Vangelis write a program that reads the input list L and the integer S and produces either the solution to the problem or provides an error message when there is no solution available.

Standard input

On the first line there will be an integer number T (representing the number of test cases) followed by 2 input lines for each test case:

- On the first line of each test case, there will be 2 integers S and E, where S is the expected sum and E is the number of elements in the list.
- On the second line, there will be E integers separated by a space. Each integer represents an element of the list L. The elements are not sorted in any way and some could have the same value. In cases where the number E is 0, the second line will be empty.

All values for the elements of list L will be in the same range as the value S.

Standard output

For each test case you will have to write one line that contains:

- **If there is an unique solution**: Write two elements, x and y of the list L, separated by a single space, such that $x + y = S$ and $x \leq y$.
- **If there are multiple solutions**: Pick the first complete pair that appears on the list and provides the correct sum. Print the two list elements forming this pair in increasing order, as above.
- **If there is no solution**: Print the error message `!OK` .

Constraints and notes

- $1 \leq T \leq 1\ 000$
- $-10^6 < S < 10^6$
- $0 \leq E \leq 2 \cdot 10^4$
- The sum of values of E is at most 10^7

Input	Output	Explanation
6 8 4 1 2 4 4 8 4 1 2 7 9 8 4 1 2 8 9 8 4 4 5 3 4 8 4 4 1 1 8 8 4 -1 1 9 8	4 4 1 7 !OK 3 5 !OK -1 9	Line 1: Indicates the number of tests to follow, in this case we have 6 so we expect 12 more lines (two for each test). Line 2: Starts the first test. Two integers ($S = 8$ and $E = 4$). There will be 4 integers in the next line from which we want to find two of them that can produce the sum value of 8. In this case we have a solution if we sum the values 4 and 4 so this is what we print on the first line of the output. Line 4: Second test. Two integers ($S = 8$ and $E = 4$) again means that there will be 4 integers in the next line from which we want to find two of them that can produce the sum value of 8. In this case we have a solution as if we sum the values 1 and 7. Line 6: Third test. Two integers ($S = 8$ and $E = 4$). In this case we do not have a solution as there is no pair of values in the next line that can be added to obtain the wanted result and so we print `!OK` on the third line of the output. Line 8: Fourth test. In this case there are multiple solutions (5+3 and 4+4). The 5+3 option is chosen as this is the first complete pair in the sequence, `3 5` is printed to be in increasing order.
10 12 4 5 0 8 9 13 4 10 0 6 1 17 3 2 9 4 0 8 2 7 6 5 3 9 8 0 4 0 4 0 7 7 8 10 9 7 4 6 2 13 3 6 7 1 2 7 10 7 5 1 0 3 9 0 1 -1	!OK !OK !OK !OK !OK !OK !OK 6 7 !OK !OK	