The world-famous architect Mr. Fru from Reus plans to build a colossal pillar H units high. Mr. Fru has n black pieces with heights $b_1, \dots, b_n$ and m white pieces with heights $w_1, \dots, w_m$. According to his design the pillar must have four pieces: a black piece on its bottom, a white piece above it, another black piece above, and finally a white piece on the top of the pillar.

Mr. Fru wishes to know which of the combinations of four pieces with total height H is the most stable. Given two combinations $A = [a_1, a_2, a_3, a_4]$ and $B = [b_1, b_2, b_3, b_4]$ (where a_1 denotes the height of the bottom (black) piece of the pillar A, a_2 denotes the height of the second (white) piece of A, and so on), A is more stable than B if $a_1 > b_1$, or if $a_1 = b_1$ but $a_2 > b_2$, etc. (In other words, A is more stable than B if and only if the sequence of heights of the pieces of A is lexicographically larger than the sequence of heights of the pieces of B.)

Write a program such that, given the desired height H of the pillar, the heights of the black pieces and the heights of the white pieces, computes which pillar (if any) of height exactly H would be the most stable.

Input

Input consists of zero ore more test cases. Each test case has on the first line H, an integer between 1 and $4 * 10^8$. The second and third lines of each test consist respectively of the sequence $b_1, \dots, b_n$ and of the sequence $w_1, \dots, w_m$. A blank line separates two consecutive test cases. You can assume $2 \le n \le 100$ and $2 \le m \le 100$, and that no piece has a height larger than 10^8.

Output

For every test case, print one line with the sequence of heights of the pieces of the most stable pillar. If no solution exists, print '`no solution`'.

Sample Input

```
100
20 20
30 10 30 50

100
20 10 4
50 30 45
```

Sample Output

```
20 50 20 10
no solution
```