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The Virtual Learning Environment for Computer Programming

Pillars **P85783_en**

Segon Concurs de Programació de la UPC - Final (2004-09-29)

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

Mr. Fruí wishes to know which combination 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), we say that 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 several cases, each in three lines. The first line has H, an integer number between 1 and $4 \cdot 10^8$. The second and third lines consist respectively of $b_1, \ldots, b_n$ and of $w_1, \ldots, w_m$. A blank line separates two cases. Assume $2 \le n \le 1000$ and $2 \le m \le 1000$, and that no piece has a height larger than 10^8.

Output

For every case, print the sequence of heights of the pieces of the most stable pillar, from bottom to top. 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
```

Problem information

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