

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

X. Mountain Scenery

time limit per test: 2 seconds

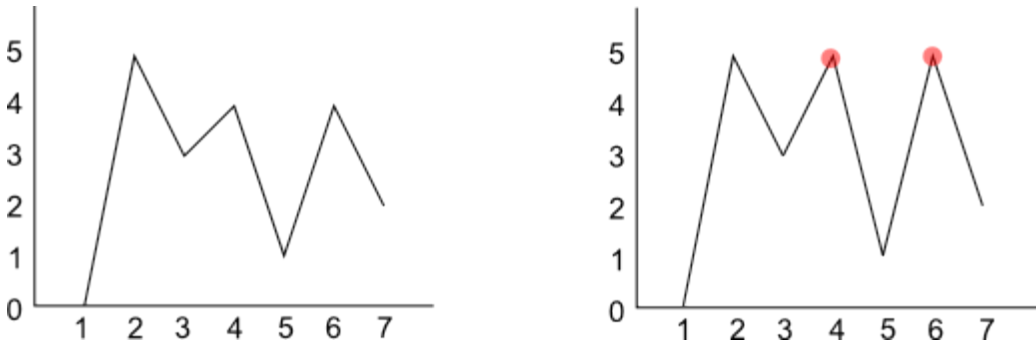
memory limit per test: 256 megabytes

input: standard input

output: standard output

Little Bolek has found a picture with n mountain peaks painted on it. The n painted peaks are represented by a non-closed polyline, consisting of $2n$ segments. The segments go through $2n + 1$ points with coordinates $(1, y_1), (2, y_2), \dots, (2n + 1, y_{2n+1})$, with the i -th segment connecting the point (i, y_i) and the point $(i + 1, y_{i+1})$. For any even i ($2 \leq i \leq 2n$) the following condition holds: $y_{i-1} < y_i$ and $y_i > y_{i+1}$.

We shall call a vertex of a polyline with an even x coordinate a *mountain peak*.



The figure to the left shows the initial picture, the figure to the right shows what the picture looks like after Bolek's actions. The affected peaks are marked red, $k = 2$.

Bolek fancied a little mischief. He chose exactly k mountain peaks, rubbed out the segments that went through those peaks and increased each peak's height by one (that is, he increased the y coordinate of the corresponding points). Then he painted the missing segments to get a new picture of mountain peaks. Let us denote the points through which the new polyline passes on Bolek's new picture as $(1, r_1), (2, r_2), \dots, (2n + 1, r_{2n+1})$.

Given Bolek's final picture, restore the initial one.

Input

The first line contains two space-separated integers n and k ($1 \leq k \leq n \leq 100$). The next line contains $2n + 1$ space-separated integers $r_1, r_2, \dots, r_{2n+1}$ ($0 \leq r_i \leq 100$) — the y coordinates of the polyline vertices on Bolek's picture.

It is guaranteed that we can obtain the given picture after performing the described actions on some picture of mountain peaks.

Output

Print $2n + 1$ integers $y_1, y_2, \dots, y_{2n+1}$ — the y coordinates of the vertices of the polyline on the initial picture. If there are multiple answers, output any one of them.

Examples

input	Copy
3 2 0 5 3 5 1 5 2	
output	Copy
0 5 3 4 1 4 2	

input	Copy
1 1 0 2 0	
output	Copy
0 1 0	

→ Attention

The package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

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Finished