D. Bear and Two Paths

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Bearland has n cities, numbered 1 through n. Cities are connected via bidirectional roads. Each road connects two distinct cities. No two roads connect the same pair of cities.

Bear Limak was once in a city a and he wanted to go to a city b. There was no direct connection so he decided to take a long walk, visiting each city **exactly once**. Formally:

- There is no road between a and b.
- There exists a sequence (path) of n distinct cities $v_1, v_2, ..., v_n$ that $v_1 = a$, $v_n = b$ and there is a road between v_i and v_{i+1} for .

On the other day, the similar thing happened. Limak wanted to travel between a city c and a city d. There is no road between them but there exists a sequence of n distinct cities $u_1, u_2, ..., u_n$ that $u_1 = c$, $u_n = d$ and there is a road between u_i and u_{i+1} for .

Also, Limak thinks that there are at most k roads in Bearland. He wonders whether he remembers everything correctly.

Given n, k and four distinct cities a, b, c, d, can you find possible paths $(v_1, ..., v_n)$ and $(u_1, ..., u_n)$ to satisfy all the given conditions? Find any solution or print `-1` if it's impossible.

Input

The first line of the input contains two integers n and k $(4 \le n \le 1000, n - 1 \le k \le 2n - 2)$ — the number of cities and the maximum allowed number of roads, respectively.

The second line contains four **distinct** integers a, b, c and d $(1 \le a, b, c, d \le n)$.

Output

Print `-1` if it's impossible to satisfy all the given conditions. Otherwise, print two lines with paths descriptions. The first of these two lines should contain n distinct integers $v_1, v_2, ..., v_n$ where $v_1 = a$ and $v_n = b$. The second line should contain n distinct integers $u_1, u_2, ..., u_n$ where $u_1 = c$ and $u_n = d$.

Two paths generate at most $2n - 2$ roads: $(v_1, v_2), (v_2, v_3), ..., (v_{n-1}, v_n), (u_1, u_2), (u_2, u_3), ..., (u_{n-1}, u_n)$. Your answer will be considered wrong if contains more than k distinct roads or any other condition breaks. Note that (x, y) and (y, x) are the same road.

Examples

input

```
7 11
2 4 7 3
```

output

```
2 7 1 3 6 5 4
7 1 5 4 6 2 3
```

input

```
1000 999
10 20 30 40
```

output

```
-1
```

Note

In the first sample test, there should be 7 cities and at most 11 roads. The provided sample solution generates 10 roads, as in the drawing. You can also see a simple path of length n between 2 and 4, and a path between 7 and 3.