

B. Equal XOR

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given an array a of length $2n$, consisting of each integer from 1 to n exactly **twice**.

You are also given an integer k ($1 \leq k \leq \lfloor \frac{n}{2} \rfloor$).

You need to find two arrays l and r each of length $2k$ such that:

- l is a subset[†] of $[a_1, a_2, \dots, a_n]$
- r is a subset of $[a_{n+1}, a_{n+2}, \dots, a_{2n}]$
- bitwise **XOR** of elements of l is equal to the bitwise XOR of elements of r ; in other words, $l_1 \oplus l_2 \oplus \dots \oplus l_{2k} = r_1 \oplus r_2 \oplus \dots \oplus r_{2k}$

It can be proved that at least one pair of l and r always exists. If there are multiple solutions, you may output any one of them.

[†] A sequence x is a subset of a sequence y if x can be obtained by deleting several (possibly none or all) elements of y and rearranging the elements in any order. For example, $[3, 1, 2, 1]$, $[1, 2, 3]$, $[1, 1]$ and $[3, 2]$ are subsets of $[1, 1, 2, 3]$ but $[4]$ and $[2, 2]$ are not subsets of $[1, 1, 2, 3]$.

Input

Each test contains multiple test cases. The first line contains a single integer t ($1 \leq t \leq 5000$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains 2 integers n and k ($2 \leq n \leq 5 \cdot 10^4$, $1 \leq k \leq \lfloor \frac{n}{2} \rfloor$).

The second line contains $2n$ integers a_1, a_2, \dots, a_{2n} ($1 \leq a_i \leq n$). It is guaranteed that every integer from 1 to n occurs exactly twice in a .

It is guaranteed that the sum of n over all test cases does not exceed $5 \cdot 10^4$.

Output

For each test case, output two lines.

On the first line of output, output $2k$ integers l_1, l_2, \dots, l_{2k} .

On the second line of output, output $2k$ integers r_1, r_2, \dots, r_{2k} .

If there are multiple solutions, you may output any one of them.

Example

input	Copy
4 2 1 1 2 2 1 6 1 6 4 2 1 2 3 1 6 3 5 5 4 4 1 1 2 3 4 1 2 3 4 6 2 5 1 3 3 5 1 2 6 4 6 4 2	
output	Copy
2 1 2 1 6 4 1 3 1 2	

Codeforces Round 934 (Div. 2)

Finished

Practice



→ Virtual participation

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: PyPy 3.9.10 (7.3.9, 64bit)

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
251747673	Mar/16/2024 18:31	Accepted
251746590	Mar/16/2024 18:29	Wrong answer on pretest 1
251739440	Mar/16/2024 18:19	Wrong answer on pretest 2

→ Problem tags

bitmasks constructive algorithms

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)

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

Note

In the first test case, we choose $l = [2, 1]$ and $r = [2, 1]$. $[2, 1]$ is a subset of $[a_1, a_2]$ and $[2, 1]$ is a subset of $[a_3, a_4]$, and $2 \oplus 1 = 2 \oplus 1 = 3$.

In the second test case, $6 \oplus 4 = 1 \oplus 3 = 2$.

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