C. No More Inversions

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

You have a sequence a with n elements $1, 2, 3, \ldots, k-1, k, k-1, k-2, \ldots, k-(n-k)$ $(k \le n < 2k)$.

Let's call as inversion in a a pair of indices $i < j$ such that $a[i] > a[j]$.

Suppose, you have some permutation p of size k and you build a sequence b of size n in the following manner: $b[i] = p[a[i]]$.

Your goal is to find such permutation p that the total number of inversions in b doesn't exceed the total number of inversions in a, and b is *lexicographically maximum*.

Small reminder: the sequence of k integers is called a permutation if it contains all integers from 1 to k exactly once.

Another small reminder: a sequence s is *lexicographically smaller* than another sequence t, if either s is a prefix of t, or for the first i such that $s_i \neq t_i$, $s_i < t_i$ holds (in the first position that these sequences are different, s has smaller number than t).

Input

The first line contains a single integer t $(1 \le t \le 1000)$ — the number of test cases.

The first and only line of each test case contains two integers n and k $(k \le n < 2k$; $1 \le k \le 10^5)$ — the length of the sequence a and its maximum.

It's guaranteed that the total sum of k over test cases doesn't exceed 10^5.

Output

For each test case, print k integers — the permutation p which maximizes b lexicographically without increasing the total number of inversions.

It can be proven that p exists and is unique.

Example

input Copy

```
4
1 1
2 2
3 2
4 3
```

output Copy

```
1
1 2
2 1
1 3 2
```

Note

In the first test case, the sequence $a = [1]$, there is only one permutation $p = [1]$.

In the second test case, the sequence $a = [1, 2]$. There is no inversion in a, so there is only one permutation $p = [1, 2]$ which doesn't increase the number of inversions.

In the third test case, $a = [1, 2, 1]$ and has 1 inversion. If we use $p = [2, 1]$, then $b = [p[a[1]], p[a[2]], p[a[3]]] = [2, 1, 2]$ and also has 1 inversion.

In the fourth test case, $a = [1, 2, 3, 2]$, and since $p = [1, 3, 2]$ then $b = [1, 3, 2, 3]$. Both a and b have 1 inversion and b is the lexicographically maximum.

constructive algorithms math *1500

No tag edit access

→ **Contest materials**

- Announcement
- Tutorial