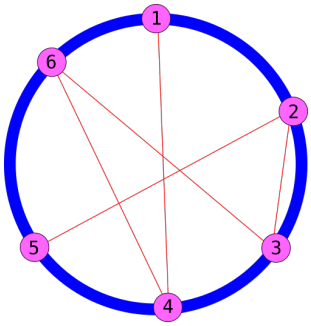
XXV Spain Olympiad in Informatics
Final, day 2
`atrapasuenos`

Dreamcatcher

Given n points on a circle numbered consecutively from 1 to n, we make a *dreamcatcher* from a permutation $p_1, \ldots, p_n$ of $1, 2, \ldots, n$ drawing, for each $1 \leq i < n$, the segment between points p_i and p_{i+1}.



For example this dreamcatcher has been formed from permutation `1 4 6 3 2 5`.

We say that a dreamcatcher has k intersections if there are k pairs of segments that intersect in their interiors (i.e. not in the endpoints). For example, the dreamcatcher above has 4 intersections. Note that the exact position of the points does not affect the number of intersections, only their relative positions.

Given n and k, you are asked to determine if there exists a dreamcatcher with n points and k intersections and if the answer is affirmative to construct it.

Input and output

The first line contains the number of cases T.

For each case, there is one line of input with n y k.

For each case, the output must contain one line with the word `SI` if there exists a dreamcatcher with n points and k intersections, and with the word `NO` otherwise. If the answer is `SI`, the output must contain a second line with n integers $p_1, \ldots, p_n$, the permutation of the dreamcatcher. If there are multiple possible permutations you can print any.

Sample

Input:

```
5
6 4
2 0
2 1
8 10
5 1000000000
```

Output:

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

```
NO
SI
1 4 2 6 8 3 7 5
NO
```

Constraints

$1 \leq T \leq 20$

$2 \leq n \leq 1000$

$0 \leq k \leq 10^9$

Subtasks

1. (12 points) $k \leq 2$.
2. (12 points) $k \leq 5$.
3. (14 points) $k \leq n$.
4. (18 points) $n \leq 5$.
5. (18 points) $n \leq 10$.
6. (26 points) No additional constraints.