

B. Medians

time limit per test: 1 second
memory limit per test: 256 megabytes

You are given an array $a = [1, 2, \dots, n]$, where n is **odd**, and an integer k .

Your task is to choose an **odd** positive integer m and to split a into m subarrays[†] b_1, b_2, \dots, b_m such that:

- Each element of the array a belongs to exactly one subarray.
- For all $1 \leq i \leq m$, $|b_i|$ is **odd**, i.e., the length of each subarray is odd.
- $\text{median}([\text{median}(b_1), \text{median}(b_2), \dots, \text{median}(b_m)]) = k$, i.e., the median[‡] of the array of medians of all subarrays must equal k . $\text{median}(c)$ denotes the median of the array c .

[†] A subarray of the array a of length n is the array $[a_l, a_{l+1}, \dots, a_r]$ for some integers $1 \leq l \leq r \leq n$.

[‡] A median of the array of odd length is the middle element after the array is sorted in non-decreasing order. For example: $\text{median}([1, 2, 5, 4, 3]) = 3$, $\text{median}([3, 2, 1]) = 2$, $\text{median}([2, 1, 2, 1, 2, 2, 2]) = 2$.

Input

Each test consists of 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 two integers n and k ($1 \leq k \leq n < 2 \cdot 10^5$, n is **odd**) — the length of array a and the desired median of the array of medians of all subarrays.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case:

- If there is no suitable partition, output -1 in a single line.
- Otherwise, in the first line, output an **odd** integer m ($1 \leq m \leq n$), and in the second line, output m distinct integers $p_1, p_2, p_3, \dots, p_m$ ($1 = p_1 < p_2 < p_3 < \dots < p_m \leq n$) — denoting the left borders of each subarray.

In detail, for a valid answer $[p_1, p_2, \dots, p_m]$:

- $b_1 = [a_{p_1}, a_{p_1+1}, \dots, a_{p_2-1}]$
- $b_2 = [a_{p_2}, a_{p_2+1}, \dots, a_{p_3-1}]$
- \dots
- $b_m = [a_{p_m}, a_{p_m+1}, \dots, a_n]$.

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

Example

input	Copy
<pre>4 1 1 3 2 3 3 15 8</pre>	
output	Copy
<pre>1 1 3</pre>	

Codeforces Round 983 (Div. 2)

Contest is running

00:05:27

Contestant



→ Submit?

Language: Python 3.8.10
Almost always, if you send a solution on PyPy, it works much faster

Choose file: Choose File No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Last submissions

Submission	Time	Verdict
289272581	Nov/01/2024 19:13	Wrong answer on pretest 1
289271028	Nov/01/2024 19:11	Wrong answer on pretest 1
289269209	Nov/01/2024 19:08	Wrong answer on pretest 1

→ Score table

	Score
Problem A	274
Problem B	411
Problem C	685
Problem D	959
Problem E	1233
Problem F	1644
Successful hack	100
Unsuccessful hack	-50
Unsuccessful submission	-50
Resubmission	-50

* If you solve problem on 01:53 from the first attempt

```

1 2 3
-1
5
1 4 7 10 13

```

Note

In the first test case, the given partition has $m = 1$ and $b_1 = [1]$. It is obvious that $\text{median}(\text{median}([1])) = \text{median}([1]) = 1$.

In the second test case, the given partition has $m = 3$ and:

- $b_1 = [1]$
- $b_2 = [2]$
- $b_3 = [3]$

Therefore, $\text{median}(\text{median}([1]), \text{median}([2]), \text{median}([3])) = \text{median}([1, 2, 3]) = 2$.

In the third test case, there is no valid partition for $k = 3$.

In the fourth test case, the given partition has $m = 5$ and:

- $b_1 = [1, 2, 3]$
- $b_2 = [4, 5, 6]$
- $b_3 = [7, 8, 9]$
- $b_4 = [10, 11, 12]$
- $b_5 = [13, 14, 15]$

Therefore,

$\text{median}(\text{median}([1, 2, 3]), \text{median}([4, 5, 6]), \text{median}([7, 8, 9]), \text{median}([10, 11, 12]), \text{median}([13, 14, 15])) = \text{median}([2, 5, 8, 11, 14]) = 8$

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