

## Problem H. Shiratama

Input file:            standard input  
 Output file:          standard output  
 Time limit:           2 seconds  
 Memory limit:        1024 megabytes

Kamome, as a big fan of Shiratama, is trying to create some paintings in the style of Shiratama.

... Well, the problem setter is too lazy to write a story, so let's get straight to the problem.

Kamome's painting can be abstracted into  $p_1, p_2, \dots, p_{2n}$ , which is a permutation of  $1 \sim 2n$ . You need to sort  $p$  by performing no more than  $2n$  operation 1 and no more than  $2n^2$  operation 2.

- Operation 1: For each  $i = 1, 3, \dots, 2n - 1$ , **simultaneously** swap  $p_i$  and  $p_{i+1}$ .
- Operation 2: Kamome selects an **even** number  $i$  ( $1 \leq i \leq 2n$ ) and swaps  $p_i$  and  $p_{i+1}$ . Note that we consider  $p_{2n+1} = p_1$ .

However, sometimes it is impossible to sort this permutation using the above operations, if so, report it.

### Input

Each test contains multiple test cases. The first line contains one integer  $t$  ( $1 \leq t \leq 10^5$ ), indicating the number of test cases. The description of the test cases follows.

The first line contains a single integer  $n$  ( $1 \leq n \leq 100$ ,  $\sum n^2 \leq 10^6$ ), indicating the length of the permutation.

The second line contains  $2n$  integers  $p_1, p_2, \dots, p_{2n}$  ( $1 \leq p_i \leq 2n$ ,  $p_i \neq p_j$  for  $1 \leq i < j \leq 2n$ ), indicating the permutation.

### Output

For each test case, if it is impossible to sort the permutation, output one word NO.

Otherwise, your output contains three lines. The first line contains one word YES, the second line contains one integer  $k$  ( $0 \leq k \leq 2n^2 + 2n$ ), and the third line contains  $k$  integers  $a_1, a_2, \dots, a_k$  ( $a_i \in \{1\} \cup \{2, 4, \dots, 2n\}$ ), indicating the operations you perform. If  $a_i = 1$  that means you perform an operation 1, otherwise that means you perform an operation 2 and choose  $x = a_i$ .

Note that you can't use more than  $2n$  operation 1 and  $2n^2$  operation 2.

If there are multiple possible answer, you may output any of them.

### Examples

standard input	standard output
3	NO
2	YES
1 3 4 2	2
2	2 1
2 4 1 3	YES
3	7
1 2 4 3 5 6	2 4 1 6 1 2 4

### Note

For test case 2, the change of permutation is shown as follows:

$$[2, \underline{4}, 1, 3] \rightarrow [2, 1, \underline{4}, 3] \rightarrow [1, 2, 3, 4]$$