Problem K. Master of Modular Arithmetic

"*But, come on...*"
"*I'm sick of solving yet another crazy problem on counting some, ugh, non-sensical things*"
"*And then take the answer, modulo a large prime number.*"
"*Can we get something different?*"

Little Cyan Fish loves modular arithmetic and is the one who mastered the skills of handling modular arithmetic.

To test if you have truly understood the beauty of modular arithmetic, Little Cyan Fish gives you a sequence $a_1, a_2, \ldots a_n$ of n positive integers.

Then, you are allowed to perform the following operations at most $2n + 10$ times:

1. Choose an integer $1 \leq x \leq 10^9$.
2. Choose two indices i and j, such that $1 \leq i, j \leq n$ and $i \neq j$.
3. Update the sequence:
   - $a_i \leftarrow a_i \bmod x$
   - $a_j \leftarrow a_j \cdot x$

Little Cyan Fish wants you to apply some operations on the sequence a, such that in the end, a becomes another sequence $b_1, b_2, \ldots, b_n$. Can you figure out if it is possible?

Input

There are multiple test cases. The first line of the input contains a single integer T ($T \geq 1$), indicating the number of test cases. For each test case:

The first line of the input contains a single integer n ($1 \leq n \leq 5 \times 10^5$).

The next line of the input contains n integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 10^8$), indicating the initial sequence.

The next line of the input contains n integers $b_1, b_2, \ldots, b_n$ ($1 \leq b_i \leq 10^8$), indicating the final sequence.

It is guaranteed that the sum of n over all test cases does not exceed 5×10^5.

Output

For each test case:

If it is impossible to convert the sequence a to the sequence b within $2n + 10$ operations, output a single line "`No`".

Otherwise, the first line of the output should contain the word "`Yes`".

The next line of the input contains a single integer m ($0 \leq m \leq 2n + 10$), indicating the number of operations you would like to apply.

The next m lines describe all your operations. Each line of these lines contains three integers i, j, and x, indicating an operation.

Example

standard input	standard output
3 2 2 2 1 2 4 4 4 4 4 1 1 1 1 5 1 4 3 2 5 2 4 5 4 1	Yes 5 1 2 10 2 1 19 1 2 7 2 1 3 1 2 2 No Yes 3 3 4 2 1 3 5 5 1 2