As we all know, integers have no upper bound. This makes it sometimes hard for the computer to store a very large integer due to memory limits of data types. In order to represent such big number, we will represent it by 2 arrays:

A=[a1, a2,a3,…..,an]

B=[b1, b2,b3,….,bn]

These arrays represent the number x= a1^b1 * a2^b2 * a3^b3 * …. * an^bn

For example, A=[1,4,3] and B=[2,1,2] represent the number 1^2 * 4^1 * 3^2=36.

You are now given two integers m and n and two big integers, a and b, following the given representation. You have to find out whether a^m=b^n or not.

Example: if m=3 and n=2, suppose that A1=[1,4,3] and B1=[2,1,2] , then a=36. Suppose that A2=[2,3] and B2=[3,3], then b=216. a^m=36^3=46656 and b^n=216^2=46656. Thus, in this case the equality is satisfied.

Input format:

- The first line contains p, the length of the 2 arrays representing a. (0<p<10^5)
- The two following lines represent the arrays representing the number a, each element of the arrays is an integer between 1 and 10^5.
- The following line contains q, the length of the arrays representing b. (0<q<10^5)
- The two following lines represent the arrays representing the number b, each element of the arrays is an integer between 1 and 10^5.
- Finally, m and n are given being both inclusively between 2 and 1000.

Output format: print Yes if the required equality is satisfied, else print No.

Sample Input:

3

1 4 3

2 1 2

2

2 3

3 3

3 2

Sample Output: Yes