

# Problem: Permutation Swap

Time limit: 1 second  
Memory limit: 32 MB

## Problem Statement

Mr. Panda has a permutation  $P$  of  $N$  integers  $1, 2, \dots, N$ , but he doesn't like it. Mr. Panda wants to get a permutation  $Q$ .

Also he believes that there are  $M$  good pairs of integers  $(a_i, b_i)$ . Mr. Panda can swap the integers in  $P$  as many times as he wants but he can only swap  $P_x$  and  $P_y$  if  $(x, y)$  is a good pair.

Help Mr. Panda determine if it is possible for him to get permutation  $Q$  by repeatedly swapping elements in  $P$ .

## Input

The first line of input will contain an integer  $T$ , denoting the number of test cases.

Each test case starts with two space-separated integers  $N$  and  $M$ . The next line contains  $N$  space-separated integers  $P_i$ . The next line contains  $N$  space-separated integers  $Q_i$ . Each of the next  $M$  lines contains two space-separated integers  $a_i$  and  $b_i$ .

## Output

For every test case output "YES" (without quotes) if Mr. Panda can obtain permutation  $Q$  and "NO" otherwise.

## Subtasks

Subtask	Score	Limits
1	16	$1 \leq M, N \leq 10$
2	27	$1 \leq M, N \leq 100$
3	57	$1 \leq M, N \leq 10^5$

For all test data,  $1 \leq T \leq 10$ ,  $1 \leq a_i, b_i \leq N$

## Sample Input

```
2
4 2
1 3 2 4
1 4 2 3
3 4
3 4
4 3
1 3 2 4
1 4 2 3
2 4
3 3
4 2
```

## Sample Output

```
NO
YES
```