E: Composition

Functions are everywhere! We use them as shorthand for complicated expressions or algorithms, and we use them to provide readable divisions for our code. However, in this problem, we'll be looking at the functions you know and love from math. You will be given a set consisting of input and output pairs for the function, which will be a one-toone function from the domain set **{1, 2, …, n}** to the range set **{1, 2, …, n}**. Being one-to-one means that every element in the domain is mapped to one and only one element in the range, and every element in the range is mapped to one and only one element in the domain. Your task is to find the smallest m such that for any element **x** in the domain set

We have that **$f^m(x) = x$**. where **$f^m(x)$** is the function composed m times. For example, if **m = 3**, we have $f^3(x)$

= f(f(f(x))).

Input
Input begins with the number of test cases T (T ≤ 100). Each test case will begin with the

number of elements in the set N (N ≤ 100,000) and will be followed by N lines where each

line will have two numbers A and B (1 ≤ A, B ≤ 100,000) which will be the input/output

pair (that is, f(A) = B)

Output
For each test case, print out the value of m. Your output should follow the exact format shown in

the sample output below.

Sample Input
```
2
3
1 2
2 1
3 3
6
1 2
2 3
  3 1
4 4
5 6
6 5
```

Sample Output
```
2
6
```