5052 - Genome Evolution

Asia - Tehran - 2010/2011

Xi, a developmental biologist is working on developmental distances of chromosomes. A chromosome, in the Xi's simplistic view, is a permutation from n genes numbered 1 to n. Xi is working on an evolutionary distance metric between two chromosomes. In Xi's theory of evolution any subset of genes lying together in both chromosomes is a positive witness for chromosomes to be similar.

A positive witness is a pair of sequence of the same length A and A', where A is a consecutive subsequence of the first chromosome, A' is a consecutive subsequence of the second chromosome, and A is a permutation of A'. The goal is to count the number of positive witnesses of two given chromosomes that have a length greater than one.

Input

There are several test case in the input. Each test case starts with a line containing the number of genes ($2 \leq n \leq 3000$). The next two lines contain the two chromosomes, each as a list of positive integers. The input terminates with a line containing ``0" which should not be processed as a test case.

Output

For each test case, output a single line containing the number of positive witness for two chromosomes to be similar.

Sample Input

```
4
3 2 1 4
1 2 4 3
5
3 2 1 5 4
3 2 1 5 4
0
```

Sample Output

```
3
10
```

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