Problem E
Great Library
Time Limit: 1 second

The city has n residential areas and the transportation system consisting of $n - 1$ two-way streets connecting all the residential areas. The residential areas are numbered from 1 to n. All two-way streets have the same length and each of them connects exactly 2 residential areas.

The city government plans to build 3 Great Libraries at 3 different residential areas for the city residents in a way such that the shortest traveling distances between every two libraries are the same.

Help the city government to calculate the number of ways to build the Great Libraries that satisfy the requirement. Two ways of construction are different if there exists at least one residential area that is included in one way of construction but not in the other.

Input

The first line contains an integer n $(1 \leq n \leq 5000)$- the number of residential areas.

Each line in the next $n - 1$ lines contains two integer u, v describing a two-way street connecting the residential area u and the residential area v $(1 \leq u, v \leq n)$.

Output

Print the number of ways to build 3 Great Libraries that satisfy the requirement.

Sample Input	Sample Output
7 1 2 5 7 2 5 2 3 5 6 4 5	5

Explanation: There are 5 ways to build Great Libraries: (1, 3, 5), (2, 4, 6), (2, 4, 7), (2, 6, 7), (4, 6, 7).