The network of city is in the form of unrooted tree and an integer k.

Your task is to color these cities with respect following rules:

* The color value assigned to each city lie between 1 and 20(inclusive).
* The square of the sum of two adjacent nodes in tree should be less than or equal to 450 .
* The sum of every two adjacent nodes must not be divisible by k.

You have to tell the total number of ways in which the trees can be coloured.

Input format:

First line: integer n and k

Next n-1 lines, two integers x and y describing the edge

Sample test case:

5 23

1 3

4 2

0 4

1 4