Problem ID: tourists
CPU Time limit: 3 secor
Memory limit: 1024 ME

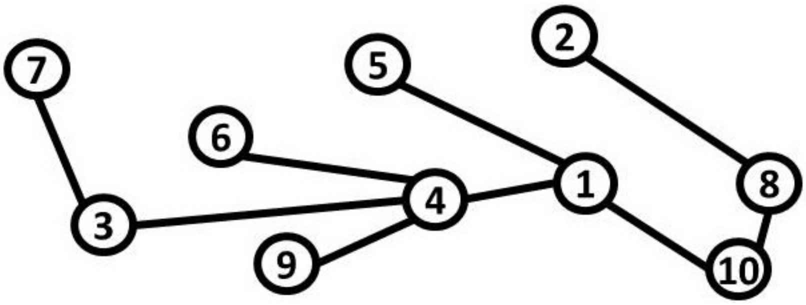
Problem I
Tourists

Source: North Americar Invitational Programmin (NAIPC) 2016

In Tree City, there are n tourist attractions uniquely labeled 1 to n. The attractions are connected by a set of $n-1$ bidirectional roads in such a way that a tourist can get from any attraction to any other using some path of roads.

You are a member of the Tree City planning committee. After much research into tourism, your committee has discovered a very interesting fact about tourists: they LOVE number theory! A tourist who visits an attraction with label x will then visit another attraction with label y if $y > x$ and y is a multiple of x. Moreover, if the two attractions are not directly connected by a road the tourist will necessarily visit all of the attractions on the path connecting x and y, even if they aren't multiples of x. The number of attractions visited includes x and y themselves. Call this the $length$ of a path.

Consider this city map:



Here are all the paths that tourists might take, with the lengths for each:
$1 \to 2 = 4, 1 \to 3 = 3, 1 \to 4 = 2, 1 \to 5 = 2, 1 \to 6 = 3, 1 \to 7 = 4,$
$1 \to 8 = 3, 1 \to 9 = 3, 1 \to 10 = 2, 2 \to 4 = 5, 2 \to 6 = 6, 2 \to 8 = 2,$
$2 \to 10 = 3, 3 \to 6 = 3, 3 \to 9 = 3, 4 \to 8 = 4, 5 \to 10 = 3$

To take advantage of this phenomenon of tourist behavior, the committee would like to determine the number of attractions on paths from an attraction x to an attraction y such that $y > x$ and y is a multiple of x. You are to compute the **sum** of the lengths of all such paths. For the example above, this is: $4+3+2+2+3+4+3+3+2+5+6+2+3+3+3+4+3 = 55$.

Input

Each input will consist of a single test case. Note that your program may be run multiple times on different inputs. The first line of input will consist of an integer n ($2 \leq n \leq 200\,000$) indicating the number of attractions. Each of the following $n-1$ lines will consist of a pair of space-separated integers i and j ($1 \leq i < j \leq n$), denoting that attraction i and attraction j are directly connected by a road. It is guaranteed that the set of attractions is connected.

Output

Output a single integer, which is the sum of the lengths of all paths between two attractions x and y such that $y > x$ and y is a multiple of x.

Sample Input 1

```
10
3 4
3 7
1 4
4 6
1 10
8 10
2 8
1 5
4 9
```

Sample Output 1

```
55
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