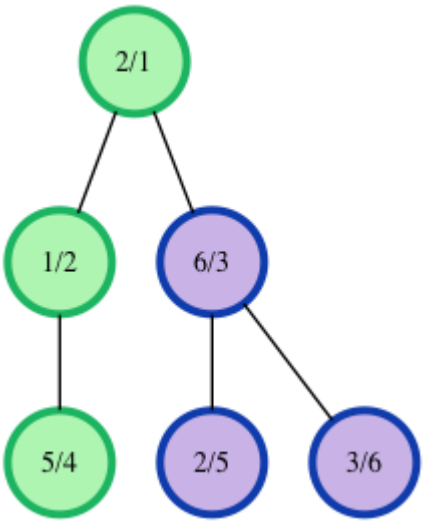
☆ Primes in Subtree

You will be given a description of a tree rooted at node *1*, with each node having an associated value. After you construct the tree, there will be a number of queries in the form of a node number. For each query, determine the number of elements in the subtree rooted at the query node that have values that are prime numbers.

As an example, the following tree has been created. The labels are in the form *[data]/[node number]*. Assuming the query is *3*, we analyze the blue subtree and determine there are *2* prime values in the subtree: *2* and *3* located in nodes *5* and *6*. The value in node *3, i.e. 6,* is not prime.



Function Description

Complete the function *primeQuery* in the editor below. The function must return an array of integers, each the result of a query, aligned by index.

primeQuery has the following parameter(s):

n: an integer denoting the number of nodes in the tree to be labeled *1* to *n*
u[u[0],...u[n-1]]: an array of integers denoting start node of each edge[i]
v[v[0],...v[n-1]]: an array of integers denoting end node of each edge[i]
values[values[1],...values[n]]: an array of integers denoting the data value for each node[i]

queries[queries[0],...queries[n-1]]: an array of integers, the node numbers to query

Constraints

- $1 \le n \le 10^5$
- $1 \le u[i], v[i], values[i] \le 10^5$
- $u[i] \ne v[i]$
- $1 \le q \le 10^5$
- $1 \le queries[i] \le 10^5$

Input Format For Custom Testing

Sample Case 0

Sample Input 0

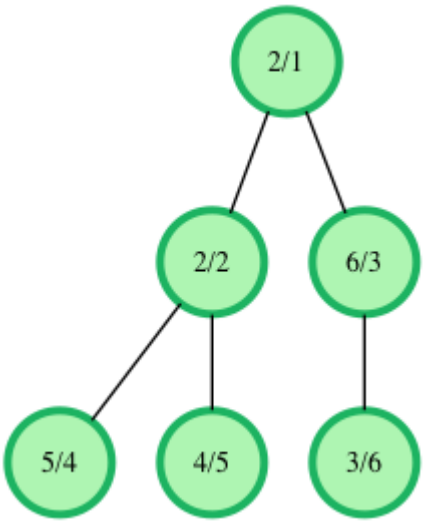
```
6
5
1
2
2
1
3
5
2
4
5
3
6
6
2
2
6
5
4
3
5
1
4
5
6
2
```

Sample Output 0

```
4
1
0
1
2
```

Explanation 0

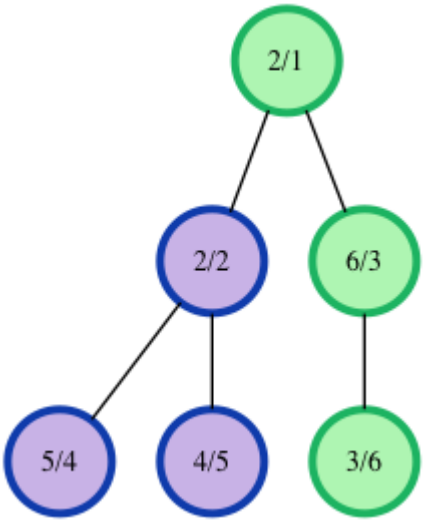
The given tree is:



The answer for queries:

- Query 1: Nodes having a prime value in the subtree rooted at 1: 1, 2, 4, and 6. So the answer is 4.
- Query 2: Nodes having a prime value in the subtree rooted at 4: 4. So the answer is 1.
- Query 3: There are no nodes having a prime value in the subtree rooted at 5. So the answer is 0.
- Query 4: Node having a prime value in the subtree rooted at 6: 6. So the answer is 1.
- Query 5: Nodes having a prime value in the subtree rooted at 2: 2 and 4. So the answer is 2.

The following image highlights the subtree rooted at node 2 in blue.



YOUR ANSWER