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## E. New Year Tree

time limit per test: 3 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

The New Year holidays are over, but Resha doesn't want to throw away the New Year tree. He invited his best friends Kerim and Gural to help him to redecorate the New Year tree.

The New Year tree is an undirected tree with  $n$  vertices and root in the vertex 1.

You should process the queries of the two types:

1. Change the colours of all vertices in the subtree of the vertex  $v$  to the colour  $c$ .
2. Find the number of different colours in the subtree of the vertex  $v$ .

### Input

The first line contains two integers  $n, m$  ( $1 \leq n, m \leq 4 \cdot 10^5$ ) — the number of vertices in the tree and the number of the queries.

The second line contains  $n$  integers  $c_i$  ( $1 \leq c_i \leq 60$ ) — the colour of the  $i$ -th vertex.

Each of the next  $n - 1$  lines contains two integers  $x_j, y_j$  ( $1 \leq x_j, y_j \leq n$ ) — the vertices of the  $j$ -th edge. It is guaranteed that you are given correct undirected tree.

The last  $m$  lines contains the description of the queries. Each description starts with the integer  $t_k$  ( $1 \leq t_k \leq 2$ ) — the type of the  $k$ -th query. For the queries of the first type then follows two integers  $v_k, c_k$  ( $1 \leq v_k \leq n, 1 \leq c_k \leq 60$ ) — the number of the vertex whose subtree will be recoloured with the colour  $c_k$ . For the queries of the second type then follows integer  $v_k$  ( $1 \leq v_k \leq n$ ) — the number of the vertex for which subtree you should find the number of different colours.

### Output

For each query of the second type print the integer  $a$  — the number of different colours in the subtree of the vertex given in the query.

Each of the numbers should be printed on a separate line in order of query appearing in the input.

### Examples

input
7 10
1 1 1 1 1 1 1
1 2
1 3
1 4
3 5
3 6
3 7
1 3 2
2 1
1 4 3
2 1
1 2 5
2 1
1 6 4
2 1

### Educational Codeforces Round 6

Finished

Practice



### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

### → Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

### → Submit?

Language: GNU G++ 5.1.0

Choose file: Choose File No file chosen

Submit

### → Last submissions

Submission	Time	Verdict
<a href="#">22689913</a>	Dec/04/2016 10:02	Time limit exceeded on test 64
<a href="#">22689889</a>	Dec/04/2016 10:00	Time limit exceeded on test 51
<a href="#">21426571</a>	Oct/14/2016 18:35	Wrong answer on test 1
<a href="#">21404738</a>	Oct/13/2016 16:56	Wrong answer on test 1

### → Problem tags

[bitmasks](#) [data structures](#)

No tag edit access

2 2  
2 3

output

2  
3  
4  
5  
1  
2

input

23 30  
1 2 2 6 5 3 2 1 1 1 2 4 5 3 4 4 3 3 3 3 3 4 6  
1 2  
1 3  
1 4  
2 5  
2 6  
3 7  
3 8  
4 9  
4 10  
4 11  
6 12  
6 13  
7 14  
7 15  
7 16  
8 17  
8 18  
10 19  
10 20  
10 21  
11 22  
11 23  
2 1  
2 5  
2 6  
2 7  
2 8  
2 9  
2 10  
2 11  
2 4  
1 12 1  
1 13 1  
1 14 1  
1 15 1  
1 16 1  
1 17 1  
1 18 1  
1 19 1  
1 20 1  
1 21 1  
1 22 1  
1 23 1  
2 1  
2 5  
2 6  
2 7  
2 8  
2 9  
2 10  
2 11  
2 4

output

6  
1  
3  
3  
2  
1  
2  
3  
5  
5  
1

→ Contest materials

- Announcement ☐
- Tutorial ☐

2
2
1
1
1
2
3

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The only programming contests Web 2.0 platform  
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