COT - Count on a tree

You are given a tree with **N** nodes. The tree nodes are numbered from **1** to **N**. Each node has an integer weight.

We will ask you to perform the following operation:

- **u v k** : ask for the kth minimum weight on the path from node **u** to node **v**

Input

In the first line there are two integers **N** and **M**. (**N, M** <= 100000)

In the second line there are **N** integers. The ith integer denotes the weight of the ith node.

In the next **N-1** lines, each line contains two integers **u v**, which describes an edge (**u**, **v**).

In the next **M** lines, each line contains three integers **u v k**, which means an operation asking for the kth minimum weight on the path from node **u** to node **v**.

Output

For each operation, print its result.

Example

```
Input:
8 5
105 2 9 3 8 5 7 7
1 2
1 3
1 4
3 5
3 6
3 7
4 8
2 5 1
2 5 2
2 5 3
2 5 4
7 8 2
```

```
Output:
2
8
9
105
7
```