Problem C. 8

Time Limit	1000 ms
Mem Limit	1572864 kB
Code Length Limit	6000 B
OS	Linux

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	Output
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	2 8 9 105 7