Problem J. Salesmen

Input file:	stdin
Output file:	stdout
Time limit:	0.5 seconds
Memory limit:	512 megabytes

bobo lives in a country where personal rockets are big fashion. The country consists of n cities which are conveniently numbered by $1, 2, \ldots, n$.

Cities are connected by bidirectional roads, and there is exactly one path between any two cities.

There are m salesmen in bobo's country. The i-th salesman travels along the roads between cities a_i and b_i and sells c_i rockets.

Since the rockets are not very high-quality, people in the i-th city will buy at most w_i rockets.

Now bobo wants to know how many rockets can be sold in salesmen's best effort (i.e. the maximum number).

Input

The first line contains 2 integers n, m ($1 \leq n, m \leq 10000$).

The second line contains n integers $w_1, w_2, \ldots, w_n$ ($0 \leq w_i \leq 100000$).

Each of the following $(n-1)$ lines contains 2 integers u_i, v_i which denotes a road between cities u_i and v_i ($1 \leq u_i, v_i \leq n$).

Each of the last m lines contains 3 integers a_i, b_i, c_i ($1 \leq a_i, b_i \leq n, 0 \leq c_i \leq 100000$).

Output

A single integer denotes the maximum number of rockets can be sold.

Sample input and output

stdin	stdout
4 2 0 1 2 2 1 4 2 4 3 4 1 2 2 1 3 3	5