A. DZY Loves Physics

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

DZY loves Physics, and he enjoys calculating density.

Almost everything has density, even a graph. We define the density of a non-directed graph (nodes and edges of the graph have some values) as follows:

where v is the sum of the values of the nodes, e is the sum of the values of the edges.
Once DZY got a graph G, now he wants to find a connected induced subgraph G' of the graph, such that the density of G' is as large as possible.

An induced subgraph $G'(V', E')$ of a graph $G(V, E)$ is a graph that satisfies:

- ;
- edge if and only if , and edge ;
- the value of an edge in G' is the same as the value of the corresponding edge in G, so as the value of a node.

Help DZY to find the induced subgraph with maximum density. Note that the induced subgraph you choose must be connected.

Input

The first line contains two space-separated integers n $(1 \le n \le 500)$, . Integer n represents the number of nodes of the graph G, m represents the number of edges.

The second line contains n space-separated integers x_i $(1 \le x_i \le 10^6)$, where x_i represents the value of the i-th node. Consider the graph nodes are numbered from 1 to n.

Each of the next m lines contains three space-separated integers a_i, b_i, c_i $(1 \le a_i < b_i \le n; 1 \le c_i \le 10^3)$, denoting an edge between node a_i and b_i with value c_i. The graph won't contain multiple edges.

Output

Output a real number denoting the answer, with an absolute or relative error of at most 10^{-9}.

Examples

input
1 0 1

output
0.000000000000000

input
2 1 1 2 1 2 1

output
3.000000000000000

input
5 6 13 56 73 98 17

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1 2 56
1 3 29
1 4 42
2 3 95
2 4 88
3 4 63
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output

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2.965517241379311
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Note

In the first sample, you can only choose an empty subgraph, or the subgraph containing only node 1.

In the second sample, choosing the whole graph is optimal.