Problem

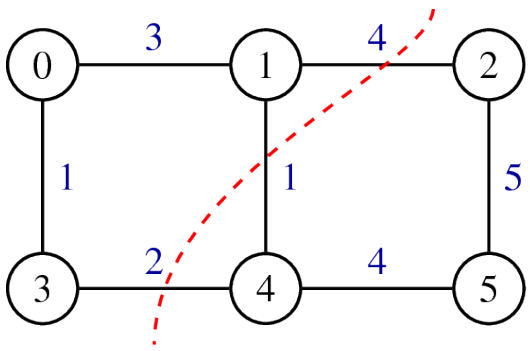
Slim Cut

Time limit: 3 seconds

Consider a weighted, undirected graph $G(V, E; w)$. A cut is a partition of the vertices into two non-empty subsets S and $\overline{S}$. Let us define the *slimness* of the cut $\{S, \overline{S}\}$ to be

$$\frac{\max\limits_{(u,v)\in E,\ u\in S,\ v\in\overline{S}} w(u,v)}{\min(|S|, |\overline{S}|)}.$$

In other words, the slimness of the cut is the maximum weight among all edges crossing the cut, divided by the size of the smaller part. For example, the cut below has slimness $\max(4,1,2)/3 = 4/3$, by choosing $S = \{0,1,3\}$ and $\overline{S} = \{2,4,5\}$ (or the other way round).



Among all possible cuts, which one is the slimmest (i.e. has the minimum slimness)? You are asked to find its slimness.

Input

The first line contains two integers n and m, representing the number of vertices and the number of edges in the graph ($2 \le n \le 14\,000$, $1 \le m \le 30\,000$). The vertices are labelled from 0 to $n-1$. The next m lines each contain three space-separated integers x_i, y_i, w_i, representing an edge connecting vertices x_i and y_i of weight w_i ($0 \le x_i, y_i < n$, $1 \le w_i \le 10^8$). The graph is guaranteed to be connected. It has no self loops or multiple edges.

Output

Output a floating point number representing the slimness of the slimmest cut of the graph. Any answer with an absolute or relative error within 10^{-8} will be accepted.

Sample Input 1	Sample Output 1
6 7 0 1 3 1 2 4 0 3 1 1 4 1 2 5 5 3 4 2 4 5 4	1.33333333333

In the sample, the cut $S = \{0,1,3\}$ and $\overline{S} = \{2,4,5\}$ has slimness $4/3$.

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