Given an undirected n-node m-edge graph G, in which each edge e has a **unique** weight $w(e)$. G is simple and connected, and G has an odd number of edges. Let μ be the median of all edge weights in G. We define the **median spanning tree** of G to be a spanning tree T of G so that T has the minimum **deviation**

$$\sigma(T) \equiv \max_{e \in T} |w(e) - \mu|$$

among all spanning trees of G, where $|a - b|$ denotes the absolute value of $a - b$. Write a program to output the deviation $\sigma(T)$ of the median spanning tree T of the input graph G.

Hint. Recall why Kruskal's algorithm works. While attempting to solve a problem that can be solved greedily, all you need is the intuition, not a formal proof ...

Input

The first line contains n and m, where n is an integer in $[2, 10^4]$ and m is an integer in $[n-1, \binom{n}{2}]$. In each of subsequent m lines, there are three integers u, v, and $w(u, v)$ indicating that G has an edge (u, v) with weight $w(u, v)$. Note that we label each node in G with a unique number in $\{1, 2, \ldots, n\}$, and thus u and v are integers in $[1, n]$. Each edge weight $w(u, v)$ is an integer in $[-10^7, 10^7]$.

Output

The deviation $\sigma(T)$ of the median spanning tree T of the input graph G.

Sample Input

```
4 5
1 2 -1
1 3 2
2 3 -2
3 4 1
2 4 0
```

Sample Output

```
1
```