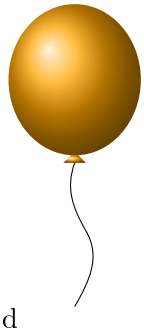
I Forest Separation



Time limit: 3.0s
Memory limit: 256MB

Given a forest with n nodes and m edges, each edge has an associated weight w and an associated cost c.

Define the ugliness of a path between two connected nodes u and v as the sum of the weights of the edges on the path between u and v. Define the ugliness of a forest as the **maximum** ugliness of all paths between any two connected nodes in the forest.

Given an integer k, you are allowed to remove some edges from the forest such that the sum of the costs of the removed edges does not exceed k. Find the **minimum** ugliness achievable by performing the stated operation multiple times (possibly zero) such that the sum of the costs of the removed edges does not exceed k.

Input

The first line contains three integers n, m, and k, the number of nodes in the forest, the number of edges, and the threshold on the sum of costs of the edges that can be removed respectively.

$1 \leq n, m \leq 1000$. $1 \leq k \leq 10^{12}$.

Each of the following m lines contains four integers, u, v, w, c. Each line indicates that there is an edge between node u and node v with weight w and cost c.

$1 \leq u, v \leq n$. $1 \leq w, c \leq 10^9$.

Output

A single integer, the minimum ugliness of the resulting forest achievable after removing some edges whose sum of costs does not exceed k.

Samples

Sample input 1	Sample output 1
5 4 9 1 2 12 4 1 3 7 6 2 4 9 5 2 5 8 2	8