Buy and Delete

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1.5 seconds
Memory limit:	512 megabytes

Alice and Bob are playing a game on a directed graph G. There are n vertices in G, labeled by $1, 2, \ldots, n$. Initially, there are no edges in G. Alice will first buy some direct edges from the shop and then add them into G. After that, Bob needs to delete edges until there are no edges in G. In a deletion round, Bob can delete a subset of edges S from G, such that when only keeping edges in S, the graph is acyclic. Note that Alice can buy nothing, and in such a case the number of deletion rounds is 0.

There are m edges in the shop. Alice has c dollars, so the total price of edges she will buy should not exceed c. Alice wants to maximize the number of deletion rounds while Bob wants to minimize it. Both Alice and Bob will play optimally. Please write a program to predict the number of deletion rounds.

Input

The input contains only a single case.

The first line of the input contains three integers n, m and c ($2 \leq n \leq 2\,000$, $1 \leq m \leq 5\,000$, $1 \leq c \leq 10^9$), denoting the number of vertices in G, the number of edges in the shop, and how many dollars Alice has.

In the next m lines, the i-th line ($1 \leq i \leq m$) contains three integers u_i, v_i and p_i ($1 \leq u_i, v_i \leq n$, $u_i \neq v_i$, $1 \leq p_i \leq 100\,000$), denoting a directed edge in the shop. Alice can pay p_i dollars to buy it, and add an edge from vertex u_i to vertex v_i in G.

Output

Print a single line containing an integer, denoting the number of deletion rounds.

Examples

standard input	standard output
3 2 4 1 2 5 2 3 6	0
3 3 3 1 2 1 2 3 1 1 3 1	1