Globetrotter

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Globetrotter Airlines operates in n cities, offering m one-way flight routes at various prices.

They have recently offered a new promotion, where passengers travelling from city 1 to city n (directly or indirectly) will not be charged for the k most expensive flights of their journey. If k or fewer flights are used, the entire journey is free.

Determine the minimum cost to travel from city 1 to city n with the promotion in effect.

Input

The first line of input consists of three space-separated integers n, m and k, representing the numbers of cities, flights and free flights respectively.

m line follow, the ith of which consists of three space-separated integers a_i, b_i and c_i ($1 \leq a_i, b_i \leq n$, $a_i \neq b_i$, $1 \leq c_i \leq 10,000$), representing a flight from city a_i to city b_i with cost c_i.

Output

Print a single integer, the minimum cost to travel from city 1 to city n with the promotion in effect.

If it is not possible to travel from city 1 to city n, print `-1` instead.

Scoring

For Subtask 1 (10 points):

- $2 \leq n \leq 100,000$,
- $1 \leq m \leq 100,000$, and
- $k = 0$.

For Subtask 2 (30 points):

- $2 \leq n \leq 1,000$,
- $1 \leq m \leq 1,000$, and
- $k = 1$.

For Subtask 3 (60 points):

- $2 \leq n \leq 100,000$,
- $1 \leq m \leq 100,000$, and
- $0 \leq k \leq 10$.

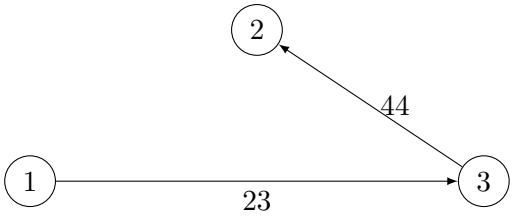
Note that a correct solution to Subtask 2 is *not guaranteed* to satisfy Subtask 1.

Examples

standard input	standard output
3 2 0 1 3 23 3 2 44	23
4 4 0 1 2 1 1 3 1 4 2 1 4 3 1	-1
4 4 0 1 2 1 2 3 1 3 4 1 1 4 4	3
4 4 1 1 2 1 2 3 1 3 4 1 1 4 4	0
4 4 2 1 2 1 2 3 1 3 4 1 1 4 2	0
6 6 2 1 2 3 2 4 6 4 6 1 1 3 4 3 5 2 5 6 2	1

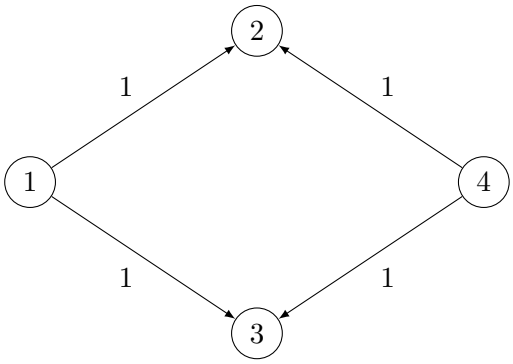
Note

In the first sample test case, there is only one way to go from city 1 to city 3: $1 \xrightarrow{23} 3$.

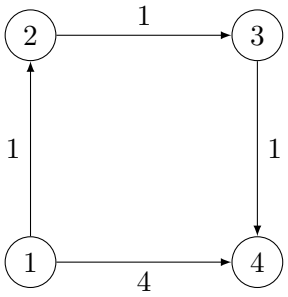


There are no free flights, so the cost is 23.

In the second sample test case, there is no way to get from city 1 to city 4 using the available flights.



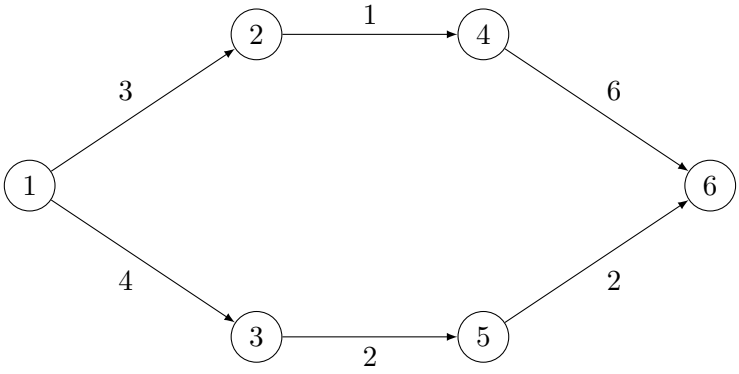
In the third sample test case, there are two available routes: a direct flight of cost 4 or a three-leg journey with cost 3. With no free flights, the latter is cheaper.



In the fourth sample test case, allowing one free flight makes the direct route free, whereas on the indirect route the passenger still has to pay for two flights.

In the fifth sample test case, it is still cheaper to fly direct, even though one of the free flights is wasted.

In the sixth sample test case, the optimal journey is $1 \xrightarrow{3} 2 \xrightarrow{1} 4 \xrightarrow{6} 6$.



The passenger won't be charged for the first and last of these flights, so the total cost is 1.