

INTERNATIONAL TOURNAMENT IN INFORMATICS

24 November, 2012, Shumen, Bulgaria

Junior Group

Task B3. WIDENING OF CHANNELS

In the Waterland country, there are n lakes (numbered from 1 to n) and m channels between them. The width (in meters) of each channel is known. Navigation in the channels can be performed in both directions. It is known that a boat with width of one meter can reach any lake, starting from lake number 1.

Write program **channels**, which calculates the minimum number of channels that should be widened, so that a boat with width of k meters can make a trip between every two lakes (the boat can move from one lake to another, if its width is less than or equal to the width of the channel, connecting the lakes).

Input

On the first line of the standard input are given integers, n and m ($1 < n \leq 1000$, $1 < m \leq 100000$).

On each of the next m lines are given three integers, i , j and w , showing that there is a channel of width w ($1 \leq w \leq 200$) between lakes, i and j ($1 \leq i, j \leq n$).

On the last line is given the integer k ($1 \leq k \leq 200$).

Output

On a line of the standard output the program have to write one integer: the minimum number of channels that should be widened.

Example

Input

```
6 9
1 6 1
1 2 2
1 4 3
2 3 3
2 5 2
3 4 4
3 6 2
4 5 5
5 6 4
4
```

Output

```
2
```