Tourist Guide

Time: 1 Second

Memory: 1MB

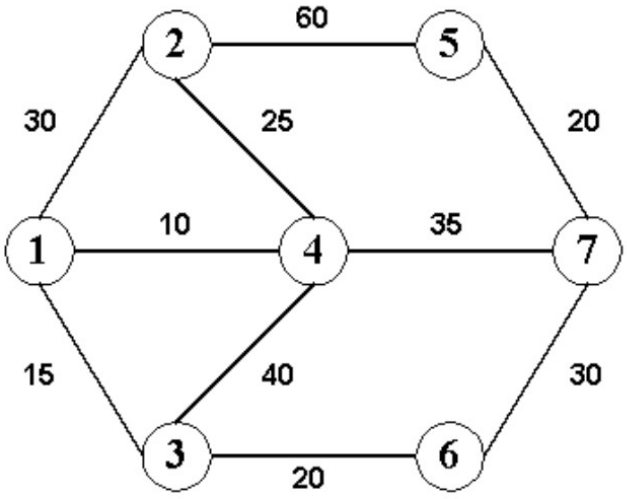
A tourist guide needs to take some tourists from one city to another. The cities are interconnected with a road network. For each pair of neighboring cities there is a bus service that runs only between those two cities and uses the road that directly connects them. Each bus service has a limit on the maximum number of passengers it can carry. Due to this, the tourist guide knows that some cities would require making extra trips if the number of tourists are more than seating capacity. For example, consider the following road map of 7 cities. The edges connecting the cities represent the roads and the number written on each edge indicates the passenger limit of the bus service that runs on that road. To take 99 tourists from city 1 to city 7, he will require at least 4 trips, and the route he would take is : 1 - 2 - 4 - 7.

Task

You need to help the tourist guide find the best route all by himself so that he may be able to take all the tourists from one city to the destination city in minimum number of trips.

Input

The first line of the input will contain two integers: N (1 to 1000) and R(1 to 1000) representing the number of cities and the number of road segments respectively. This will be followed by R lines. Each R line will contain three integers C1, C2 and P. C1 and C2 are the city numbers and P is the maximum number of passengers to be carried by the bus service on that route. The last line will contain three integers: S, D and T representing the starting city, the destination city and the number of tourists to be transferred.



Output

The output contains just one line with one number. This number is the minimum number of trips that would be required to satisfy the last line of the input.

Sample Input

7 10

1 2 30

1 3 15

1 4 10

2 4 25

2 5 60

3 4 40

3 6 20

4 7 35

5 7 20

6 7 30

1 7 99

Sample Output

4