



Jack goes to Rapture

 by [amititkgp](#)

Problem

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Jack has just moved to a new city called Rapture. However, he is confused by Rapture's public transport system. The rules of the public transport are as follows:

1. Every pair of connected stations has a fare assigned to it.
2. If a passenger travels from station A to station B, he only has to pay the difference between the fare from A to B and the cumulative fare that he has paid to reach station A [$\text{fare}(A,B) - \text{total fare to reach station A}$]. If the difference is negative, he can travel free of cost from A to B.

Since Jack is new to the city, he is unemployed and low on cash. He needs your help to figure out the most cost efficient way to go from the first station to the last station. You are given the number of stations N (numbered from 1 to N), and the fare between the E pair of stations that are connected.

Input Format

The first line contains two integers, N and E , followed by E lines containing three integers each: the two stations that are connected to each other and the fare between them (C).

Constraints

- $1 \leq N \leq 50000$
- $1 \leq E \leq 500000$
- $1 \leq C \leq 10^7$

Output Format

The minimum fare to be paid to reach station N from station 1 . If the station N cannot be reached from station 1 , print "NO PATH EXISTS" (without quotes).

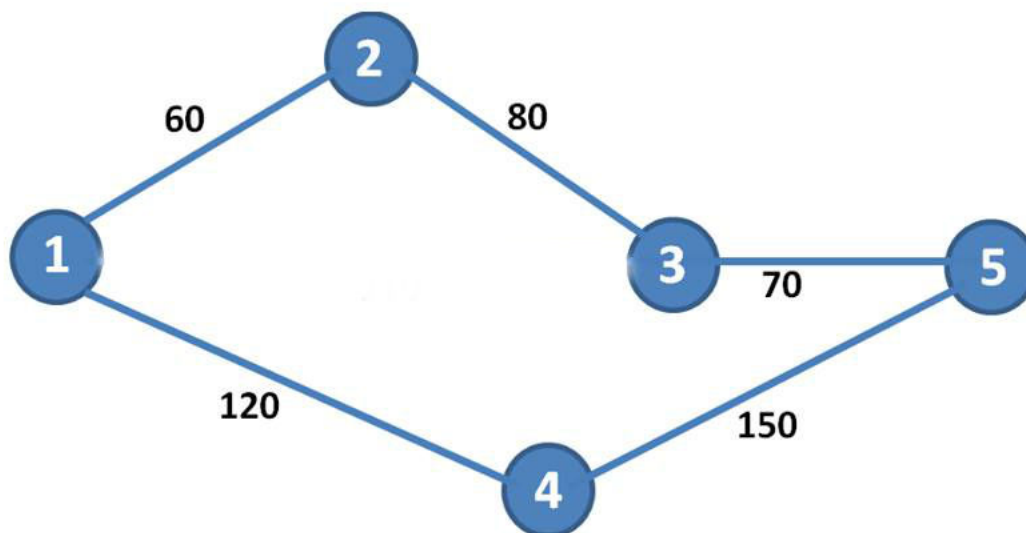
Sample Input 0

```
5 5
1 2 60
3 5 70
1 4 120
4 5 150
2 3 80
```

Sample Output 0

```
80
```

Explanation 0



There are two ways to go from first station to last station.

- 1 -> 2 -> 3 -> 5
- 1 -> 4 -> 5

For the first path, Jack first pays 60 units of fare to go from station 1 to 2. Next, Jack has to pay $80 - 60 = 20$ units to go from 2 to 3. Now, to go from 3 to 5, Jack has to pay $70 - (60 + 20) = -10$ units, but since this is a negative value, Jack pays 0 units to go from 3 to 5. Thus the total cost of this path is $(60 + 20) = 80$ units.

For the second path, Jack pays 120 units to reach station 4 from station 1. To go from station 4 to 5, Jack has to pay $150 - 120 = 30$ units. Thus the total cost becomes $(120 + 30) = 150$ units. So, the first path is the most cost efficient, with a cost of 80.

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Max Score: 80

Difficulty: Medium

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Java 7

```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

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