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# **Travelling Couples**



Problem

Submissions

Leaderboard

Discussions

AlgoLand has N cities. There are M pairs of cities connected by bidirectional trains. For travelling between any of the M pairs of cities, one can buy any of 3 types of train tickets which have the same cost irrespective of cities you are travelling between.

- ullet Ticket Type I : It costs  $C_1$  but only males can buy and travel using it.
- ullet Ticket Type II : It costs  $C_2$  but only females can buy and travel using it.
- ullet Ticket Type III : It costs  $C_3$  but only couples in the same city travelling together can buy and travel using it.

A man is currently in city 1 while his wife is at city 2. Find the minimum cost they both need to collectively spend to reach their home which is in city N. They can both reach at different times or together, but they both have to reach home.

### **Input Format**

The first line contains five space-separated integers in this order:  $C_1 \ C_2 \ C_3 \ N \ M$ .

The next  $oldsymbol{M}$  lines describe pairs of cities connected by a bidirectional train route.

## Constraints

$$1 \leq C_1, C_2, C_3 \leq 4 \cdot 10^4$$

$$3 < N < 4 \cdot 10^4$$

Every city is reachable from every other city through some combination of train routes.

Initially, the man is at city  ${f 1}$  while his wife is at city  ${f 2}$ ; and they both have to reach city  ${f N}$ .

#### **Output Format**

A single integer - the minimum collective cost of tickets they both will need to buy to reach their home city.

#### Sample Input 0

4 4 5 8 8

1 4

2 3

4 7

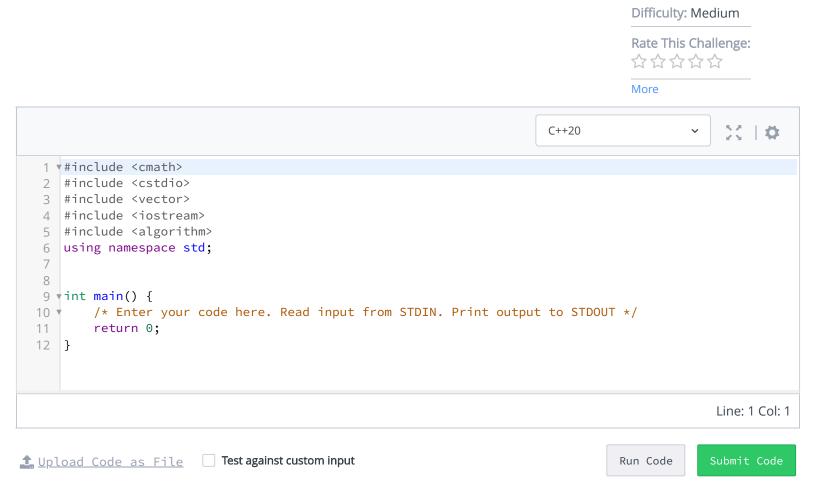
4 7

2 55 6

6 8

7 8

Sample Output 0



f y in

Submissions: 16 Max Score: 100

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