



D: Happy Journey

Time Limit: 4 second(s)

Chouchou is a cute rabbit living in Green Land city. This city has n buildings (numbered from 0 to $n - 1$), connected by m bidirectional roads. Each pair of buildings has at most one road connecting them, there is no road connecting a building to itself and it is possible to get from any building to any other building using some set of roads. Locations u , v , p and c below are all buildings.

Today, Chouchou is going to a cinema (at location c) to watch a movie with Xiangxiang. We know that Chouchou lives at u and Xiangxiang lives at v . Xiangxiang enjoys walking and takes 5 seconds to walk one metre. Chouchou, on the other hand, does not enjoy walking and takes only 1 second for each metre. However, when they walk together, Chouchou will slow down and Xiangxiang will speed up, and, together, they take 2 seconds to walk each metre.

Chouchou and Xiangxiang want to spend as little time walking to the cinema as possible, so that they can have more time together afterwards. Chouchou wants to find a meeting point p so that they can first each walk to p at their respective normal walking speeds and then walk together from p to the cinema. Let t_1 be the time from when Chouchou leaves u until he arrives at c , having met Xiangxiang at p . Let t_2 be the time from when Xiangxiang leaves v until she arrives at c , having met Chouchou at p .

Chouchou wants to find an optimal meeting point p , such that $t_1 + t_2$ is minimised. When multiple optimal solutions exist, Chouchou wants to maximise the time, t , they spend walking together from p to c . The two rabbits do not need to leave their own homes at the same time. Can you help Chouchou to find their optimal meeting point?

Note that p may be at u , v or c , or at any other building.

Input

The first line of input consists of 2 integers n ($3 \leq n \leq 5\,000$) and m ($n - 1 \leq m \leq 100\,000$), the number of interesting places and roads in the city, respectively. The second line consists of 3 distinct integers, u ($0 \leq u < n$), v ($0 \leq v < n$) and c ($0 \leq c < n$). The following m lines each consist of 3 non-negative integers, a ($0 \leq a < n$), b ($0 \leq b < n$, $a \neq b$) and k ($1 \leq k \leq 100$). a and b represent two places and k is the length of the road that connects a and b in metres.

Output

Determine the optimal meeting point p and output the 3 integers t_1 , t_2 and t corresponding to that p .

Sample Input and Output

Sample Input	Output for Sample Input
4 5 0 1 2 0 2 50 1 2 50 0 3 5 1 3 5 3 2 5	30 20 20