

Potholes

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

The country of Byteland is in trouble, its roads are all terrible! In this country, there are $2 \leq n \leq 10^5$ cities connected by $n - 1 \leq m \leq 2 \times 10^5$ bidirectional roads, and previously, we could get from any city to any other city using some set of roads. But now, since all the roads were all constructed by the South African government, they have fallen apart! The minister of transportation has decided to do something about this dire situation, as it is reducing the amount of trade throughout the country. For each road, there is a cost $1 \leq r \leq 10^9$ to repair this road, and a second cost $1 \leq d \leq 10^9$ to demolish the road. However, the minister of transport has also contacted a company of road construction experts to help lower the cost. The company is based in $1 \leq p \leq n$ cities, and can construct a new road between any two of these cities for a price of $1 \leq c \leq 10^9$. If there was already a road between two cities, then for the company to construct a new road between those two cities, it must be demolished. Note that roads that are not repaired must be demolished. The minister of transport has asked you to help him, as he is currently busy with a completely unrelated problem involving the airports of the country. Please tell him the minimum cost to do this.

Input

On the first line, there will be four space-separated integers, n, m, p, c : The number of cities, the number of roads, the number of company buildings, and the cost for the company to construct a new road. Then there will be one line containing p space-separated integers, specifying the location of the company buildings. After this, there will be m lines, each describing a road. Line i will contain four space-separated integers a_i, b_i, d_i, r_i : Road i connects cities a_i and b_i , costs d_i to demolish and r_i to repair.

Output

Print one integer, the minimum cost possible.

Example

standard input	standard output
4 6 2 5 1 4 1 2 5 5 1 3 4 6 1 4 2 9 2 3 7 8 2 4 3 2 3 4 3 5	24