Problem L. Sheep Village

Input file: standard input
Output file: standard output

There is an old country but called Sheep Village which contains n cities numbered from 1 to n and m bidirectional roads, each of which connects two different cities.

In Sheep Village, cities are connected through roads. That is, you can always find a path from a city to any other city through some roads. Besides, each road here belongs to at most one simple circuit, where a simple circuit is a set of roads that forms a cyclic path $u_1 \to u_2 \to \ldots \to u_m \to u_1$ $(m \geq 1)$ without passing a city more than once. Note that the cyclic paths $a \to b \to c \to a$, $b \to c \to a \to b$ and $a \to c \to b \to a$ correspond to the same circuit.

There are k sheep living in Sheep Village and also k lurking wolves. Once all sheep fall asleep, the lurking wolves, led by the wolf king, will launch a blitzkrieg for their static prey. Quietly running through a road does cost energy. For the sake of energy-saving, the wolf king hopes for the best assignments for each wolf to catch a distinct sheep such that the total energy consumed in catching sheep is as small as possible.

As a brilliant strategist as well as a wolf, it's time for you to make the decision to meet the king's requirement.

Input

The first line contains three integers n, m and k $(2 \leq n \leq 10^5, n-1 \leq m \leq 2n-2, 1 \leq k \leq 10^5)$, indicating the number of cities in Sheep Village, the number of roads between cities, and the total number of sheep (or wolves) respectively.

The second line contains k integers, of which the i-th number a_i $(1 \leq a_i \leq n)$ indicates the i-th wolf is lurking in the city numbered a_i.

The third line contains k integers, of which the i-th number b_i $(1 \leq b_i \leq n)$ indicates the i-th sheep is sleeping in the city numbered b_i. Some sheep and wolves may live in a city together.

In the next m lines, each line contains three integers u, v and w $(1 \leq u, v \leq n, u \neq v, 1 \leq w \leq 10^5)$ representing a bidirectional road connecting the cities numbered u and v that costs w energy for an individual wolf running through it quietly. There may exist more than one road between any two cities.

Output

Output an integer in a line representing the minimum total energy consumed.

Example

standard input	standard output
5 8 4 2 2 3 3 4 4 5 5 1 2 1 2 1 1 1 3 1 3 1 1 1 4 1 4 1 1 1 5 1 5 1 1	8