Gin & Tonic
Problem ID: gintonic

It is once again time for the "Klub of Allergenic Tonic Tasters In Scrollbar" (KATTIS) to gather for their annual tonic tasting seance, where people with all kinds of exotic allergies will be attending.
You are the bartender for the night, and have been tasked with serving non-lethal drinks for the entire party. The Tonic Tasters should not be served just any drink – tonight it's just Gin and Tonics!


The "Klub of Allergenic Tonic Tasters In Scrollbar" as imagined by Midjourney.

The KATTIS guests know how difficult it can be to find a safe drink, and have provided you with a list of their allergies in advance. In addition, given the wide variety of gins and tonic you serve, you only have a limited supply of each type of gin and tonic. You need to figure out how many attendees can receive a G&T that is safe for them to enjoy.

Specifically, you have n members attending the KATTIS party, each with a list of m_i allergens they are allergic to. You also have g types of gin and i types of tonic available to serve. For each type of gin and tonic, you know the list of allergens it contains aswell as the available supply.

Formally, let $p_1, p_2, \ldots, p_n$ be the list of members attending the KATTIS party, where member k has a list of allergens $a_k = a_{k1}, a_{k2}, \ldots, a_{kz}$. Let $G_1, G_2, \ldots, G_g$ be the list of gins available, where gin j has a list of allergens $b_j = b_{j1}, b_{j2}, \ldots, b_{jh}$. Let $t_1, t_2, \ldots, t_i$ be the list of tonics available, where tonic r has a list of allergens $c_r = c_{r1}, c_{r2}, \ldots, c_{rv}$.
A gin and tonic pair (j, r) is safe for a member p if and only if $\forall a \in a_p (a \notin b_j$ and $a \notin c_r)$.

Your task is to find the maximum number of allergenic attendees who can receive a safe-to-drink G&T.

Input

The input consists of the following:

- Three integers g ($1 \leq g \leq 100$), i ($1 \leq i \leq 100$) and n ($1 \leq n \leq 10^6$), the number of gins, tonics and members attending the KATTIS party.
- For each gin G_i an integer ℓ_j ($1 \leq \ell_j \leq 100^6$), the amount of gin in units, followed by a list of length h ($0 \leq h \leq 100$), consisting of space seperated names representing the allergens present in gin g_i.
- For each tonic t_i an integer ℓ_r ($1 \leq \ell_r \leq 100^6$), the amount of tonic in units, followed by a list of length v ($0 \leq v \leq 100$), consisting of space seperated names representing the allergens present in tonic t_i.
- For each member n_i, an alphanumeric name followed by a space seperated list of length z ($0 \leq z \leq 100$) of the allergens they are allergic to.

Output

You should output a single integer, the maximum number of gin and tonic pairs that can be made such that no member attending the KATTIS party is exposed to any allergen they are allergic to.

Sample Input 1	Sample Output 1
3 4 5 2 lactose cucumber 2 cucumber caffeine 1 lactose caffeine 2 lactose 2 cucumber lactose 1 caffeine 1 cucumber caffeine hans lactose peter lactose george lactose cucumber patrick lactose caffeine lucas cucumber caffeine	2