



Problem F: Three Buildings

Time limit: 1s; Memory limit: 512 MB

You are the owner of a construction company in the city. There is n workers in your company, and there are three buildings to be built (let us call those buildings A, B, C).

You are trying to assign workers to these three buildings - specifically, up to n_A, n_B, n_C (respectively) workers to building A, building B, and building C (respectively). One worker can be assigned to at most one building, and workers do have preferences over which building(s) they want to be assigned to.

For instance, suppose $n = 4$ and $n_A = n_B = n_C = 1$ (let us label the four workers 1, 2, 3, and 4).

- Only worker 1 wants to be assigned to building A.
- Only worker 1 wants to be assigned to building B.
- Both workers 2 and 3 want to be assigned to building C.
- Worker 4 does not want to be assigned to any building.

In this case, because $n_C = 1$, we must choose either worker 2 or worker 3 for building C. Worker 1 can only be assigned to either building A or building B. Therefore, we can assign at most two workers to the buildings in this example.

Given n , n_A , n_B , and n_C and the preferences of n workers, write a program that computes how to assign maximum number of workers to the buildings.

Input

- The first line will contain the number of test cases, T . ($1 \leq T \leq 10$)
- For each test case, the first line will contain n and the second line will contain n_A, n_B , and n_C separated by a whitespace. ($1 \leq n \leq 10,000$, $1 \leq n_A, n_B, n_C \leq n$)
- The following three lines will describe which workers want to be assigned to each building.
- The first of the three lines will begin with m_A (the number of workers who want to be assigned to building A), followed by m_A numbers (representing workers who are labeled



from 1 to n), separated by a whitespace. Likewise, the second line will contain m_B followed by m_B numbers, and the third line m_C followed by m_C numbers. ($1 \leq m_A, m_B, m_C \leq n$)

Output

- For each test case print the maximum number of workers you can assign to the three buildings.

Sample

Input	Output
2	4
5	2
2 1 1	
4 1 2 3 4	
1 4	
1 5	
4	
1 1 1	
1 1	
1 1	
2 2 3	

Explanation

Explanation for testcase 1: Two out of three workers (1, 2, 3) should be assigned to building A. Worker 4 should be assigned to building B. Worker 5 should be assigned to building C.

Explanation for testcase 2: Described in the problem statement.