Virus

All the HSPC computers are connected to the same network to give all contestants the ability to complete competition related activities such as submitting problems and getting access to an updated scoreboard. Some of the computers on the HSPC network are older than others and do not have a strong firewall protection. The network administrator of the competition is interested in exploring this issue and figuring out how many computers could get compromised on any network if some of the computers on the network were to get compromised. You are given a total number of computers, the computers that have updated firewall software (and the ones that do not implicitly), connectivity edges between computers to establish one or more networks between the computers, and the computers that get compromised. The rule is that if one computer gets compromised, all computers that are connected to it directly or indirectly will be compromised as well if they do not have an updated firewall. The threat cannot compromise computers that have their firewall updated and will not spread to any computers connected to that computer either.

Input

The input begins with a single positive **10 <= T <= 30** integer on a line by itself indicating the number of test cases to follow. For each test case, the first line contains an integer **10 <= N <= 100** indicating the total number of computers and then another integer **2 <= P <= 50** separated by a space indicating the number of computers that have firewall software updated. The following P lines each contain an integer in range [1, N] indicating the computer that has firewall software updated. The next file contains an integer **2 <= R <= 50** indicating the number of connectivity edges between computers. The following R lines each contain two integers both in range [1, N] separated by a space indicating that the two provided computers can send messages to each other. The next line contains an integer **0 <= C <= 50** indicating the number of computers that get compromised. The following C lines each contain an integer in range [1, N] indicating the computers that get compromised. Test cases are separated by a blank line.

Output

For each test case, output the total number of computers that will get compromised on separate lines.

Sample Input	**Sample Output**
2 10 3 1 2 3 3 3 4 4 5 5 6 1 6 2 1 1 1 1 2 1 2	3 1