1371 – Energetic Pandas

There are **n** bamboos of different weights $\mathbf{W_i}$. There are **n** pandas of different capacity $\mathbf{CAP_i}$. How many ways the pandas can carry the bamboos so that each panda carries exactly one bamboo, every bamboo is carried by one panda and a panda cannot carry a bamboo that is heavier than its capacity. Two ways will be considered different if at least one panda carries a different bamboo.

Input

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

Each case starts with a line containing an integer **n (1 ≤ n ≤ 1000)** denoting the number of pandas and bamboos. The next line contains **n** space separated distinct integers denoting the weights of be bamboos. The next line contains **n** space separated distinct integers denoting the capacities for the pandas. The weights and the capacities lie in the range $\mathbf{[1, 10^9]}$.

Output

For each case, print the case number and the number of ways those pandas can carry the bamboos. This number can be very big. So print the result modulo **1000 000 007**.

Sample Input	Output for Sample Input
3 5 1 2 3 4 5 1 2 3 4 5 2 1 3 2 2 3 2 3 4 6 3 5	Case 1: 1 Case 2: 0 Case 3: 4