

1371 – Energetic Pandas

There are n bamboos of different weights W_i . There are n pandas of different capacity 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 ($1 \leq n \leq 1000$) 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 $[1, 10^9]$.

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	Case 1: 1
5	Case 2: 0
1 2 3 4 5	Case 3: 4
1 2 3 4 5	
2	
1 3	
2 2	
3	
2 3 4	
6 3 5	