BUBT INTRA-UNIVERSITY PROGRAMMING CONTEST SPRING 2017(DIVISION 2)

Finished

THE CONTEST HAS ENDED.

C. Max Min Problem

Score: 1

CPU: 2s
Memory: 512MB

You are given two array A=(a1,a2,a3...an) and B=(b1,b2,b3...bn). The product of these element is calculated as a1*b1+a2*b2+a3*b3+.... + an*bn. Now your task is to choose the subsequence of elements of array A and subsequence of elements of array B (same length and non-empty), which product value is Minimum. Before the operation you are allowed to permute each subsequence as your wish.

INPUT

The first line of input contains the number T (T<=20) the number of test cases. For each test case first line contains the number N (1<=N<=100000). The next two lines contain N integers each, giving the values of array A and array B respectively (-100000<=a[i], b[i]<=100000).

OUTPUT

For each test case, output a line, "Case X: Y" where X is the test case number, starting from 1and Y is required answer.

Sample

Input	Output
2 5 -2 -3 -1 3 2 -5 -3 -2 1 2 3 1 3 -5 -2 4 1	Case 1: -29 Case 2: -26

Problem setter: ***Raihat Zaman Neloy*** ,ACM ICPC World Finalist, 2016-17
Jahangirnagar University