Problem 90: Outwitting the Weighing Machine

Time Limit: 1 second

Some school children discovered that by getting on a weighing machine in couples, and then exchanging places—one at a time—they could get the correct weight of a whole party on the payment of but one cent. They found that in couples they weighed (in pounds): 129, 125, 124, 123, 122, 121, 120, 118, 116 and 114. What was the weight of each one of the fve little girls if taken separately?

Guess the weights of the girls

It proves that they must have been clever scholars or they never would have been able to work out the correct answer to such an interesting puzzle question, which is liable to confuse older heads than theirs.

Given a list of 10 integers, representing the weighs of each couple formed from a group of 5 people, determine the weights of each person.

Input

Input starts with a positive integer T, that denotes the number of test cases. Each test case is described by 10 integers W_1, W_2, …, W_{10} in a single line.

$T \le 3000$; $100 \le W_1 \le W_2 \le . . . \le W_{10} \le 400$

Output

For each test case, print the case number, followed by the 5 weights asked, separated by spaces. Print these numbers in ascending order.

Sample Input 1	Sample Output 1
3 114 116 118 120 121 122 123 124 125 129 110 111 114 115 118 118 119 122 123 126 180 190 190 196 196 206 216 216 226 232	Case 1: 56 58 60 64 65 Case 2: 53 57 58 61 65 Case 3: 90 90 100 106 126