

H. Dice of Probability

Program:	dice.(cpp java py)
Input:	dice.in
Balloon Color:	Green

Description

'Risk' is a board game created in the 50's and is still a popular game today. It is a war and tactics game with the eventual target of conquering the world. Risk has many rules and variants. The rule of interest for this problem relates to how a player would attack and defend their territories. Each territory has a number of armies, which can be used to attack an adjacent territory or defend against an incoming attack. Risk uses dice rolls to decide if an attack succeeds. The attacker would roll a number of dice, usually 3, and the defender would roll a number of dice, usually 2. The highest dice for both attacker and defender would be matched, then the second highest from each would be matched, and so on. For each match the highest number wins, and in case of a draw the defender wins. For each pair of dice match, the losing territory loses one of its armies. For instance, if the attacker rolls 3 dice and gets (4, 3, 3) and the defender rolls 2 dice and gets (3, 2), then the defender loses two armies. If the attacker dice are (4, 3, 3) and the defender's are (3, 3), then each would lose one army.



Example with Attacker (4,3,3), and Defender (3,2)

Given the number of dice rolled for the attacker and the defender and the value for each dice. Calculate how many armies each of them loses.

Input

The input starts with a number T ($1 \leq T \leq 1,000$) that represents the number of test cases in the file. Each test case starts with a line that contains two integers A ($1 \leq A \leq 1,000$), and D ($1 \leq D \leq 1,000$), representing the number of dice rolled by the attacker, and the number of dice rolled by the defender, respectively. Two lines follow, the first containing A integers representing the value for each dice for the attacker, and the second containing D integers representing the value for each dice for the defender. A dice value is an integer between 1 and 6, inclusive.

Output

The output for each test case is in this form:

k. L R

where k represents the test case number (starting at 1), L is the number of armies the attacker loses, and R is the number of armies the defender loses.

Sample Input / Output

dice.in

```
3
3 2
4 3 3
3 2
3 2
4 3 3
3 3
3 3
6 3 4
5 2 2
```

OUTPUT

```
1. 0 2
2. 1 1
3. 0 3
```