

Problem G Power of Combinations

Time limit: 3 seconds

Memory limit: 1024 megabytes

Problem Description

Motis recently invented a two-player card mini-game called Power of Combinations. The game rules are that each round, both players randomly receive 1 to 10 cards, and each card contains a capital English letter (like A, B, C, etc.). As the game's name “Power of Combinations” implies, the winner of each round is determined by who can produce the greatest number of subsets from their hand (手牌).

To clarify, a subset refers to any combination of cards selected from the hand, regardless of order, including the empty set. When the hand contains duplicate letters, only unique subsets are counted – in other words, having two “A”s does not double-count the subset “A”.

For example, if Player 1 gets “ABCDE” and Player 2 gets “AABBC”, then their powers for this round are 32 and 18 respectively, so Player 1 wins this round.

To avoid stopping the game every round to calculate the results, Motis is asking if you could write a program that can quickly determine the winner of the round based on the two players' hands.

Input Format

Your program is to read from standard input. The first line contains an integer N representing the number of rounds to simulate. The following N lines contains two strings separated by a space. The first string is Player 1's hand, and the second string is Player 2's hand. Each hand consists of 1 to 10 uppercase English letters and may include duplicates.

Output Format

Output N lines. Each line should contain one of the following results for the corresponding round: ‘Player 1’ if Player 1 has more unique subsets. ‘Player 2’ if Player 2 has more unique subsets. ‘Draw’ if both players have the same number of unique subsets.

Technical Specification

- $1 \leq N \leq 1,000$
- A subset includes any combination of cards, including the empty set.
- Subsets are considered unordered: “AB” is the same as “BA”.

Sample Input 1

4
ABCDE AABBC
ZZZZZ ZOO

Sample Output 1

Player 1
Draw
Draw

XYZ WXY

NONAH AHOTOK

Player 2