Problem 250: Number War

Difficulty: Easy

Author: Brett Reynolds, Bethesda, Maryland, United States

Originally Published: Code Quest 2025

Problem Background

An elementary school teacher has developed a game for her students to help teach them about place values in larger numbers. However, with her large class, she needs a way to be able to keep an eye on everyone to ensure they're understanding the rules and playing correctly. She's enlisted your help to create a computer program that can review the cards students have and declare the winner of each round.

Problem Description

Based on the card game "War," the game "Number War" involves two players, who each start with a deck of playing cards with the face cards removed, leaving only the numbers 2 through 9.

In each round, each player secretly draws the top three cards from their deck. They must use these cards to create a two-digit number by placing one card into the "tens" position of the number and another into the "ones" place – the third card is set aside. For example, given a hand with the cards 4, 7, and 2, a student could make the two-digit numbers 24, 27, 42, 47, 72, or 74.

Whichever player ends up with the larger number keeps all six cards (their three, and their opponent's three). If the players create the same number, it's WAR! Each player draws three more cards, and they try again, with the winner taking all the revealed cards. The game continues until one player has fewer than three cards remaining.

The teacher has set up a camera above each student's desk, and by using an OCR scanner, she's able to provide your program with the numbers on the three cards each student draws each round. She'd like your program to determine who the winner of each round should be, assuming they're playing correctly. She'll then use that report to follow up with students who need a bit more help.

Sample Input

The first line of your program's input, **received from the standard input channel**, will contain a positive integer representing the number of test cases. Each test case will include a single line, containing six integers separated by spaces, each ranging from 2 to 9 inclusive. The first three integers represent the cards drawn by Player 1; the last three represent those cards drawn by Player 2. Numbers may be repeated, even within a single player's hand.

```
3
4 7 2 3 5 9
7 4 9 8 5 6
5 3 4 4 2 5
```

Sample Output

For each test case, your program must print a single line declaring the result of each round, as follows:

- Print “PLAYER 1” if Player 1 is able to produce a larger two-digit number
- Print “PLAYER 2” if Player 2 is able to produce a larger two-digit number
- Print “WAR!” if the highest numbers both players can produce are equal

```
PLAYER 2
PLAYER 1
WAR!
```