Prelude

Advent season! So, let's play a game.

There are 3 players in a room. Every player owns 10 cookies of different sizes (the cookie sizes are defined as integers). All players sit in front of a table and there are 5 cookies lined up from left to right on that table.

A picture containing schematic

Description automatically generated

On the player's turn, s/he selects the first cookie among those that s/he owns and puts it at the end of the cookie line on the table. If the next cookie that s/he owns is **greater than or equal to** the first cookie on the table, then s/he picks up that first cookie from the table and eats it. Otherwise, s/he does nothing. This is the end of the player's turn.

The players are numbered 1,2,3. Player 1 starts first, then player 2, then player 3, then player 1, then player 2, then player 3, etc.

Your program should output how many cookies **every player** has eaten when everyone runs out of cookies.

Example

Say, player 1 owns cookies with the following sizes: [5, 1, 6, 9, 2, 3, 2, 4, 10, 7].  
Player 2 owns cookies with the following sizes:         [6, 3, 2, 3, 8, 3, 10, 1, 9, 1].  
Player 3 owns cookies with the following sizes:         [8, 2, 3, 1, 5, 5, 2, 5, 7, 8].  
And on the table, they can see cookies with the following sizes: [3, 2, 1, 1, 4].

Player 1 starts, so s/he puts 5 at the end of the cookie line, so on the table, they will see: [3, 2, 1, 1, 4, 5]. Then player 1 compares the next cookie s/he has (which is a size of 1) with the cookie on the table at the front of the line (which is a size of 3). Because 1 < 3, s/he cannot eat that cookie and s/he finishes the turn.

Diagram

Description automatically generated

Next, player 2 puts 6 at the end of the cookie line, so on the table, they will see: [3, 2, 1, 1, 4, 5, 6]. Then player 2 compares the next cookie s/he has (which is a size of 3) with the cookie on the table at the front of the line (which is a size of 3). Because of 3 >= 3, s/he picks it up from the table and eats it.

A picture containing shape

Description automatically generated

The game continues to player 3, and then loops back to player 1, player 2, player 3, and so on.

Shape

Description automatically generated

Your Input

First three lines of the input are the cookies that players 1,2,3 own, respectively. The fourth line is the cookies that are on the table. This is just an example input, I will also be testing on some other inputs:

5 1 6 9 2 3 2 4 10 7  
6 3 2 3 8 3 10 1 9 1  
8 2 3 1 5 5 2 5 7 8  
3 2 1 1 4

Your output

The number of cookies that players 1,2,3 have eaten when they all ran out of cookies in their hands. In the example above, your output would be:

Player 1 has eaten 4 cookies  
Player 2 has eaten 5 cookies  
Player 3 has eaten 3 cookies