ACSL

American Computer Science League

**008 2013 - 2014**

**All-Star #5**

**Royal ACSL Ur**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 12 | 11 | 10 | 9 |  |  | 20 | 19 |
| 5 | 6 | 7 | 8 | 13 | 14 | 15 | 16 |
| 4 | 3 | 2 | 1 |  |  | 18 | 17 |

**PROBLEM**: The Royal Game of Ur is played by 2 players, each with 5 markers, on a board as shown above. One player will have black markers and the other white markers. Black markers start at location 1 and can move to locations 2 - 4, 5 - 8, 13 - 16 and then 17 - 18. The white markers start at location 9 and can move to locations 10 - 12, 5 - 8 then 13 - 16, and then 19 - 20.   
  
Players take turns spinning a number wheel (1- 4) and move one of their pieces the indicated number of spaces.

A marker cannot land on a location already occupied by one of its own color.  
  
Only one piece may be moved per spin and pieces must always move around the track in the location order described above.

If a marker's move ends on a square occupied by an opposing marker, the marker  
 landed upon is sent off the board and must start again from the beginning.

Markers can be placed on the board with any spin number. If that number is a 3, then a black marker can be placed at location 3 provided that no other black marker is at location 3. If the spin is a 4, then a white marker can be placed at location 12 provided that no other  
 white marker is at location 12.  
  
 The moves in priority order are:

1. Move a marker off the board. A marker must land on either location 18 or 20 with an exact spin number.   
 2. Capture an opponent's marker by landing on an occupied location with an exact spin number.  
 3. Move the marker with the lowest location number and able to be moved to a new location.  
 4. Start a new marker on the board.  
 5. If none of the above is possible, the player loses a turn.

**INPUT**: There will be 5 lines of input. Each line will contain the number of black markers on the board, their location numbers, the number of white markers on the board, their location numbers, a spin number to use to move a black marker with the preceding data and a spin number to use to move a white marker with that same preceding data.

**OUTPUT**: For each input line print the location numbers (any order) of the markers of the moving color that remain on the board after the move is completed. Using Sample Input #1, Sample Output #1 states that black markers are at locations 2 and 4. Sample Output #2 states that white markers are at locations 10 and 12. If a marker is captured, print a C after the marker location where the capture occurred. If no move is possible or no markers of the moving color are left on the board, print NONE.

SAMPLE INPUT SAMPLE OUTPUT

1. 2, 1, 2, 2, 9, 10, 3, 3 1. 2, 4 2. 10, 12  
2. 2, 8, 15, 2, 12, 16, 3, 2 3. 8 4. 12  
3. 2, 3, 6, 2, 7, 5, 1, 1 5. 3, 7C 6. 6C, 7  
4. 0, 0, 4, 3 7. 4 8. 11  
5. 4, 1, 3, 5, 7, 1, 15, 4, 3 9. 1, 3, 5, 15C 10. NONE

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TEST DATA

TEST INPUT TEST O.UTPUT

1. 2, 4, 7, 2, 5, 8, 2, 4 1. 6, 7  
 2. 8, 13  
2. 2, 8, 16, 2, 6, 15, 3, 2 3. 15C, 16  
 4. 8C, 15  
3. 0, 1, 14, 3, 4 5. 3  
 6. NONE  
4. 3, 14, 15, 8, 3, 16, 19, 12, 3, 1 7. 8, 14  
 8. 12, 16  
5. 3, 5, 6, 7, 3, 8, 13, 14, 1, 1 9. 5, 6, 8C  
 10. 8, 13, 15