ACSL

2009 - 2010 **American Computer Science League** **Contest #3**

Senior Division
ACSL Senet

PROBLEM: The game of Senet is an ancient Egyptian board game played by two players. Although many pictures of people playing the game exist, no written rules have ever been found. Scholars have suggested several versions of the game. The version used here is called the Kendall Variant and was created by Timothy Kendall.

The game board is composed of 30 squares. If we number each square, the board can be represented like this:

1	2	3	4	5	6	7	8	9	10
20	19	18	17	16	15	14	13	12	11
21	22	23	24	25	26	27	28	29	30

The pawns will be black for the first player and white for the second player. The pawns are moved based upon the throw of counting rods. Counts of 1 – 5 are possible. If a pawn is moved to a square occupied by an opponent's pawn, the two pawns exchange places. This rule does not apply to square 30. If square 30 is occupied another pawn can't move there. A pawn can't move to a square that is already occupied by a pawn of the same color.

Certain squares have special effects on play:

The House of Rebirth – the 15th square is square pawns return to when landing on The House of Water.

The House of Happiness – the 26th square - all pawns finish a move here, even if the rod count is enough to move past it.

The House of Water –the 27th square - any pawn finishing a rod count move on this square must go back to The House of Rebirth. The only way a pawn can stay on the 27th square is by being switched from the 15th square or if a pawn of the same color is already on the 15th square. A pawn landing here may only leave the board if a four is thrown.

House of the Three Truths – the 28th square - a pawn landing here may only leave the board if a three is thrown.

House of Re-Atoum – the 29th square - a pawn landing here may only leave the board if a two is thrown.

INPUT: There will be 3 lines of input. The first line will consist of the number of black pawns followed their locations. The second line will consist of the number of white

pawns and their locations. The third line will contain 10 rod counts. The black pawn always moves first. Always try to move the pawn of the appropriate color with the highest location number. If that is not possible move the pawn with the next highest location number.

OUTPUT: For each pair of rod counts, print the new location numbers of the moved pawns. If a pawn legally moves off the board print "DONE" for its location. If no move is possible then NO VALID MOVES

SAMPLE INPUT	SAMPLE OUTPUT
1. 3, 5, 8, 12 2, 6, 17 4, 1, 2, 5, 5, 2, 5, 2, 3, 2	1. 16, 18 18, 21 21, 23 26, 25 29, 26
2. 3, 23, 8, 12 2, 24, 17 5, 3, 1, 3, 3, 5, 5, 3, 4, 2	2. 24, 26 25, 29 26, 22 DONE, 25 16, DONE