

Adversarial Sudoku

Adversarial Sudoku is a 2 player game where the goal is make it so your opponent is unable to make a valid move on a traditional Sudoku board.

The board of Adversarial Sudoku is the same as the traditional Sudoku board, and is a 9x9 board, that is divided into 9 3x3 squares. The rules for valid number placement remain the same in this variant of Sudoku. Only one of each number(1-9) may be placed in each row, column, and 3x3 square of the 9x9 board.

Adversarial Sudoku differs from traditional Sudoku, in that it is a two player game that ends when a player is unable to make a valid move. Players alternate filling in squares on the board. The player's goal is to pigeonhole his opponent into a situation where he/she is unable to make a move. Additionally, players valid move choices for the players are determined by move of the previous player. The position of the previous move in each 3x3 square determines which of the 9 3x3 squares the next player must make a move in.

To illustrate this, if a player 1 places a number in the tile labeled 7 in Figure 1, player 2, must make his/her next move in the 3x3 square labeled 7 in Figure 2.

1	2	3
4	5	6
7	8	9

Figure 1: 3x3 square

1	2	3
4	5	6
7	8	9

Figure 2: Labeled 3x3 squares of 9x9 board

Example of Win/Loss Conditions:

Suppose in Figure 3 that Player 1 last played the red 7 in the middle of the board. Player 2's next move must be in the upper center 3x3 square of the board. However, there is no valid play for Player 2 to make in this square, and as such Player 1 wins.

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

Figure 3