Custom score 1

Number of blank cells in the board. This is the simplest heuristic we can get after relaxing constraints on the original problem.

Custom score 2

Difference of legal moves of current player and opponent player along with hashing of heuristic score for the game state

Custom score 3

Sum of legal moves of both players. This is another relaxation of heuristic of custom score 1 taking only legal moves.

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*************************
      Playing Matches
*************************
```

Match #	Opponent	AB_Improved	AB_Custom	AB_Custom_2	AB_Custom_3
		Won | Lost	Won | Lost	Won | Lost	Won | Lost
	6 | 4	7 | 3	7 | 3	8 | 2	
	6 | 4	7 | 3	6 | 4	8 | 2	
	5 | 5	8 | 2	9 | 1	6 | 4	
	6 | 4	8 | 2	8 | 2	7 | 3	
	5 | 5	8 | 2	6 | 4	7 | 3	
	5 | 5	7 | 3	8 | 2	8 | 2	
	4 | 6	6 | 4	8 | 2	7 | 3	

| | Win Rate: | 52.9% | 72.9% | 74.3% | 72.9% |

As we can see on hashing custom 2 gave better results as it could go to deeper depth in the same time then if we were not using hashing. Custom1 and custom 3 are more general heuristic and could lead to wrong path thereby a slighlty less winning percentage.