Heuristic Analysis

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        Playing Matches
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Match #	Opponent	AB_Improved Won | Lost	AB_Custom Won | Lost	AB_Custom_2 Won | Lost	AB_Custom_3 Won | Lost
1	Random 1	0 | 0	10 | 0	10 | 0	10 | 0
2	MM_Open	5 | 5	3 | 7	8 | 2	7 | 3
3	MM_Center	9 | 1	10 | 0	10 | 0	8 | 2
4	MM_Improved	5 | 5	9 | 1	8 | 2	7 | 3
5	AB_Open	4 | 6	5 | 5	5 | 5	5 | 5
6	AB_Center	6 | 4	5 | 5	6 | 4	7 | 3
7	AB_Improved	6 | 4	6 | 4	6 | 4	6 | 4
	Win Rate:	64.3%	68.6%	75.7%	71.4%

I there is three functions in my game playing agent use. The first function calculates the difference between the the square of the number of my legal moves and 2 times the square of the opponent's legal moves. Next we maximize the distance between player and the opponent. The deflection strategy is used. Then the last function focuses on distance from center. It calculates the sum of the absolute number of squares from the player's position to the center of the board along x and y axes. This puts a positive coefficient to the player's distance to the center, effectively pushing it towards the edges of the board.

All of the functions perform somewhat similarly and are almost 12% apart from each other when looking at the overall win rate. The best function overall beating AB-Improved is heuristic 2 which was looking at distance from center. This heuristic probably needs to be combined with the third heuristic to be more successful.

Based on this information, I would first recommend utilizing the second function as it has the highest win rate overall. The second positive event to point out is how the biggest gap at 12% from the Improved is a respectable lead that can definitely continue to expand. The third and final selling point is that the second function is also a fairly simple heuristic which does not require unnecessary overhead.