Overall Summary

The custom score isn't fully able to beat the AB_Improved player.

Results of the tournament were as follows:

```
  Match #     Opponent    AB_Improved     AB_Custom     AB_Custom_2     AB_Custom_3
                          Won | Lost     Won | Lost     Won | Lost     Won | Lost
     1         Random      7  |  3        9  |  1        6  |  4        9  |  1
     2        MM_Open      7  |  3        6  |  4        7  |  3        6  |  4
     3       MM_Center     8  |  2        8  |  2        8  |  2        9  |  1
     4      MM_Improved    8  |  2        8  |  2        4  |  6        5  |  5
     5        AB_Open      6  |  4        4  |  6        5  |  5        5  |  5
     6       AB_Center     6  |  4        5  |  5        5  |  5        5  |  5
     7      AB_Improved    6  |  4        5  |  5        4  |  6        3  |  7
---------------------------------------------------------------------------
            Win Rate:      68.6%          64.3%          55.7%          60.0%
```

Custom Score Heuristic 1

This heuristic is an extension of the heuristic covered in the lectures, where the score is proportional to the difference between the number of moves available to the current player and the opponent.

As long as the number of moves available to each is not the same, then the score is kept proportional to the difference in number of moves.

If the number of moves available is the same, then the score is based on who is closer to the center of the board. This is based on the hypothesis, that being closer to the center of the board is an advantage.

In this case, the score is calculated as the difference in distance to the center, scaled by 1/10. The scale is to ensure, that this position does not result in a higher score, than actually having a 1 or more move advantage over the opponent.

There's a limitation in this scaling. If the board becomes large, then scaling by a fixed 1/10 means that the difference in distance may result in an greater advantage if the board is large enough. But for the board sizes used in this simulation, the 1/10 scaling works fine.

Custom Score Heuristic 2

This heuristic is an implementation of the basic heuristic covered in the lectures, where the score is proportional to the number of moves left for the current player.

Custom Score Heuristic 3

This heuristic is an implementation of the heuristic covered in the lectures, where the score is

difference between the number of moves left for the current player, and the number of moves left for the opponent.