first heuristic : returns the number of connected units of blocks in the board other than the corner unit + 1

```
if state.hiuristic_type == 0:
    return self.num_comp()
```

Runtime :
Total time taken to solve was 0.12384223937988281 seconds
Optimality:
With heuristic type 0, 5 steps were needed to solve the game
Total number of state visited is 10

second heuristic : returns the count of distinct colors in the grid, in this case 3

```
if state.hiuristic_type == 1:
    return self.num_color()
```

Runtime :
Total time taken to solve was 0.15120697021484375 seconds
Optimality:
With heuristic type 1, 4 steps were needed to solve the game
Total number of state visited is 17

third heuristic : returns the negation of the depth of the state

```
if state.hiuristic_type == 2:
    return -2 * self.get_depth()
```

Runtime :
Total time taken to solve was 0.11836838722229004 seconds
Optimality:
With heuristic type 2, 5 steps were needed to solve the game
Total number of state visited is 10

So heuristic3 is more optimal than heuristic1 and heuristic2 analyzing runtime and optimality.