Q4.

ii)

position.

2 * 7
1 5 6
4 8 3

permutation.

2 0 7 1 5 6 4 8 3.

or

⇓

2 7 1 5 6 4 8 3

odd number cols,

1 + 5 + 2 + 2 + 1 + 1 = 12 inversions.

solveable

iii) since. bfs will find the shortest solution,

run the stile-search.py file, which is a simple bfs program solves sliding tiles.

It needs: minimum 19. moves to reach the goal.

By running stile-search.py program with P_2.

we know there are 19 levels of nodes (from 0-level to 18-level),

the 0-level node is the original P_2, and we need one more move to the goal state/node, therefore,

there are 19 - 1 + 1 = 19 moves to reach the goal.