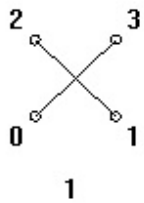
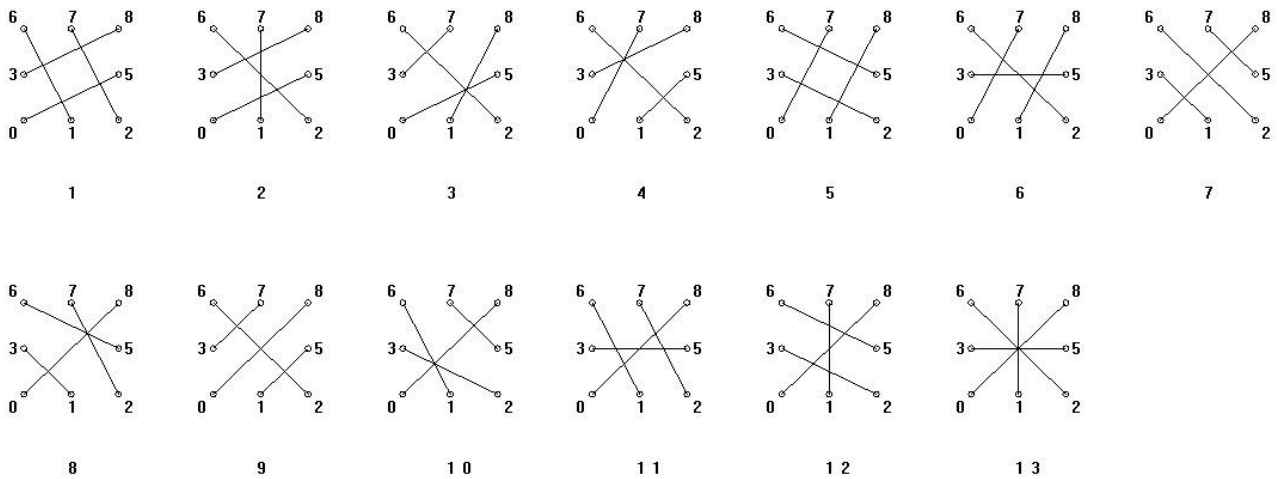


In a square $N \times N$, match in pairs all points on its sides with the condition that matching two points on the same side is not allowed. What is the number of complete matches for each N ?

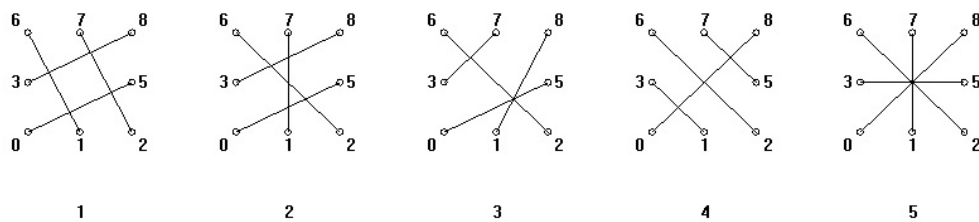
- For $N=1$: Number of complete matches = 1



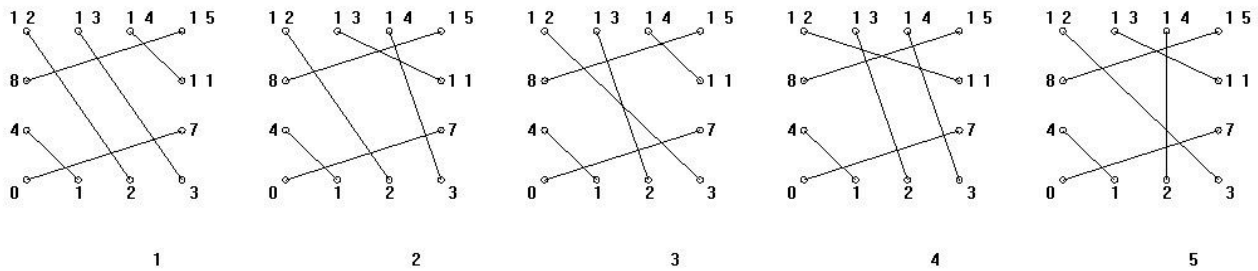
- For $N=2$: Number of complete matches = 13



If we remove symmetries and rotations in the last set, number of complete matches = 5



- For N=3: Number of complete matches = 684 (only 5 showed)



If we remove symmetries and rotations, number of complete matches = 121

- For N=4: Number of complete matches = 73980

If we remove symmetries and rotations, the number of complete matches = 3600

Sequences (offsets = 1):

- Number of complete matches: 1, 13, 684, 73980, = [A290166\(N\)](#)
- Number of complete matches (excluding symmetries and rotations): 1, 5, 121, 3600, = [A290167\(N\)](#)

Related sequence:

Numbers of distinct matches:

- For N=1: 2
List: {0, 3}, {1, 2}
- For N=2: 16
List: {0, 5}, {0, 7}, {0, 8}, {1, 3}, {1, 5}, {1, 6}, {1, 7}, {1, 8}, {2, 3}, {2, 6}, {2, 7}, {3, 5}, {3, 7}, {3, 8}, {5, 6}, {5, 7}
- For N=3: 42
List: {0, 7}, {0, 11}, {0, 13}, {0, 14}, {0, 15}, {1, 4}, {1, 7}, {1, 8}, {1, 11}, {1, 12}, {1, 13}, {1, 14}, {1, 15}, {2, 4}, {2, 7}, {2, 8}, {2, 11}, {2, 12}, {2, 13}, {2, 14}, {2, 15}, {3, 4}, {3, 8}, {3, 12}, {3, 13}, {3, 14}, {4, 7}, {4, 11}, {4, 13}, {4, 14}, {4, 15}, {7, 8}, {7, 12}, {7, 13}, {7, 14}, {8, 11}, {8, 13}, {8, 14}, {8, 15}, {11, 12}, {11, 13}, {11, 14}

Number of distinct matches: [A139267\(N\)](#)