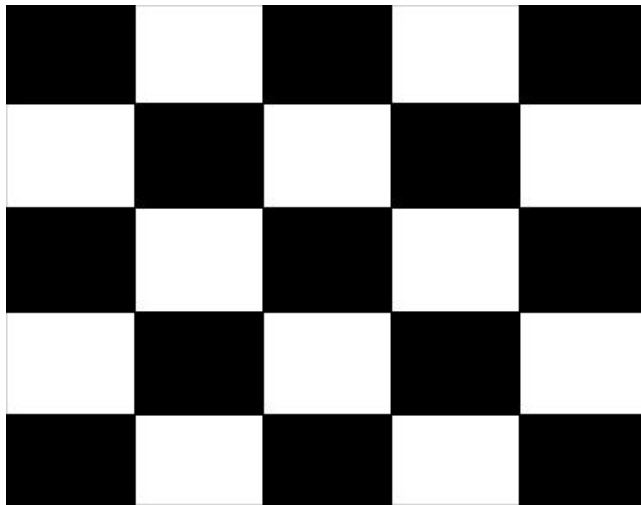


5

Let's start with a chess board.



For two colors, if the number of one color is the same as the number of black/white, then we can put one color in black boxes and the other in white boxes.

5.1

It's a coincidence that the number of red is 12 and the number of blue is 13.

Then we can have the answer.

B R B R B

R B R B R

B R B R B

R B R B R

B R B R B

Penalty is 0.

5.2

At first glance, this is a tough question. But after carefully revising the numbers, we can find the tricks there: $64 \times 64 = 4096$; $4096 / 2 = 2048$; $977 + 1072 = 2049$.

Then we can merely have the similar solution as question 1. First we regard green and white as a whole group and the others as another, we fill one group in black and another in white.

However, the group with green and white is one more than half of the grids. So we might have some changes: we make one "G" surrounded by "W"s, so that there still are no collisions.

Then we can have the answer, where the penalty is still 0.