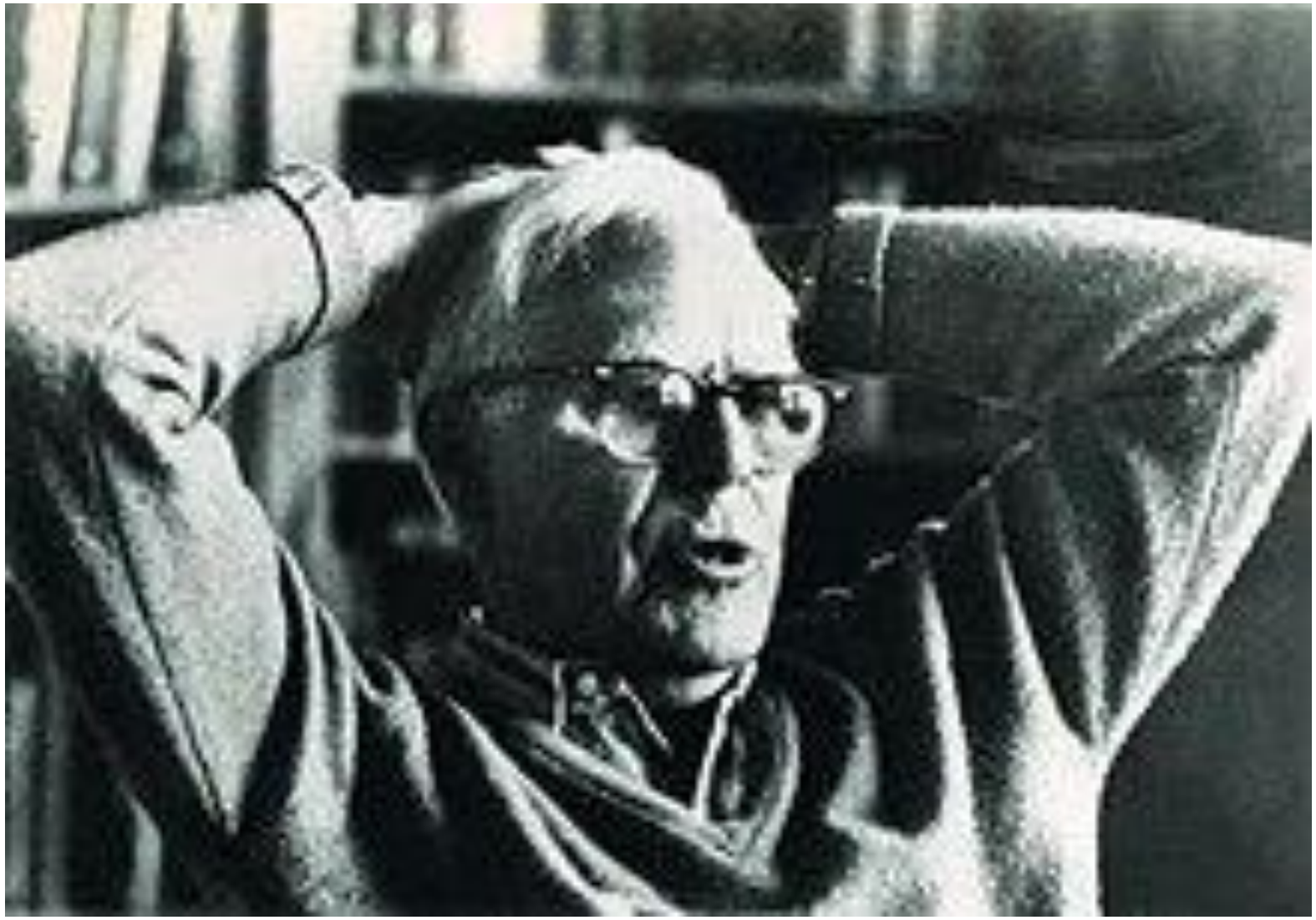
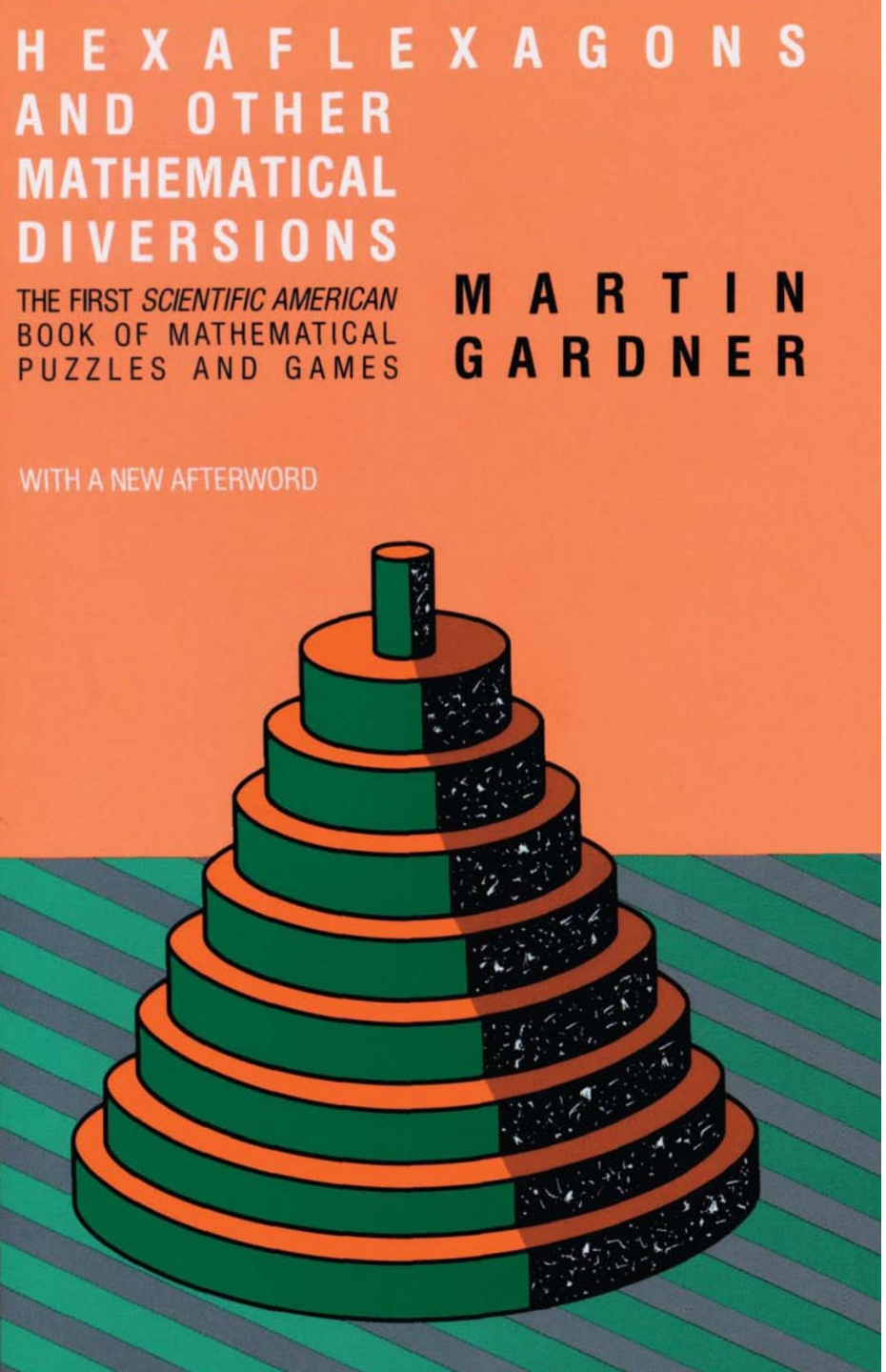


Martin Gardner, 1914 -- 2010

Day 12

Hex



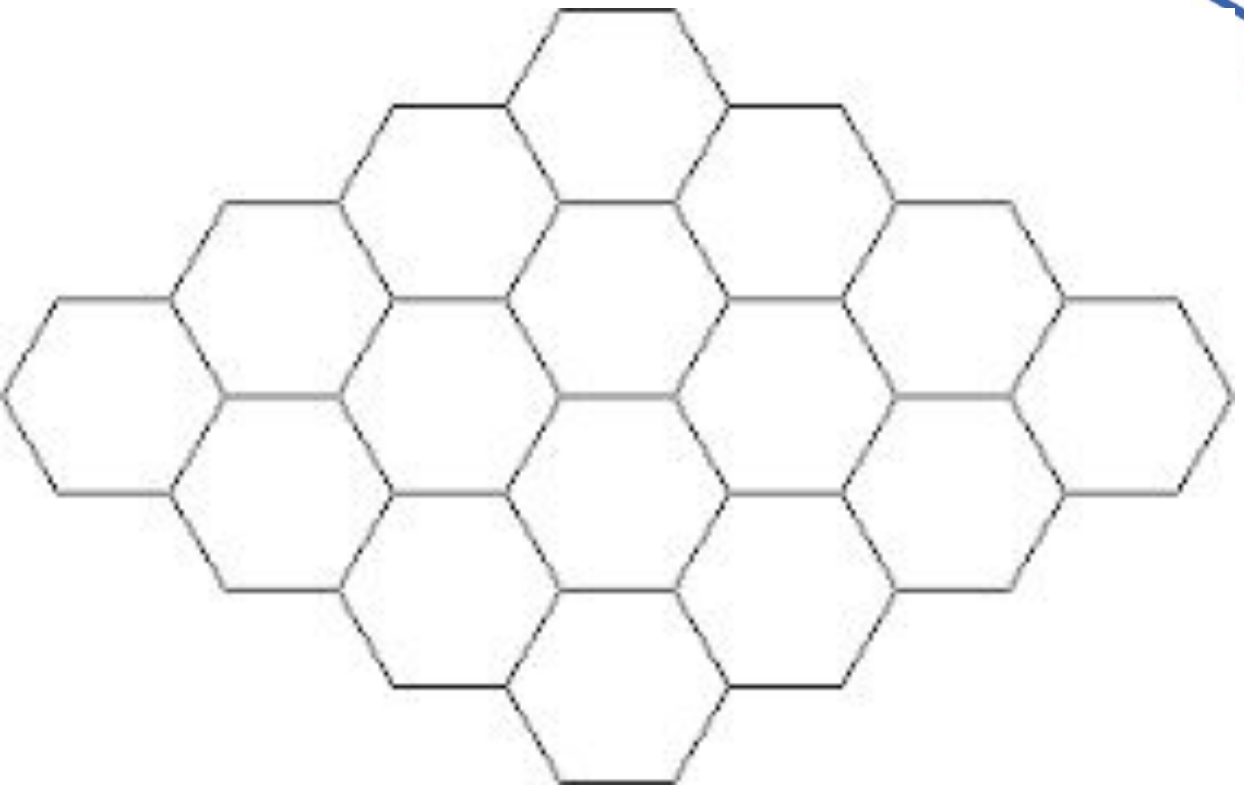
CHAPTER EIGHT

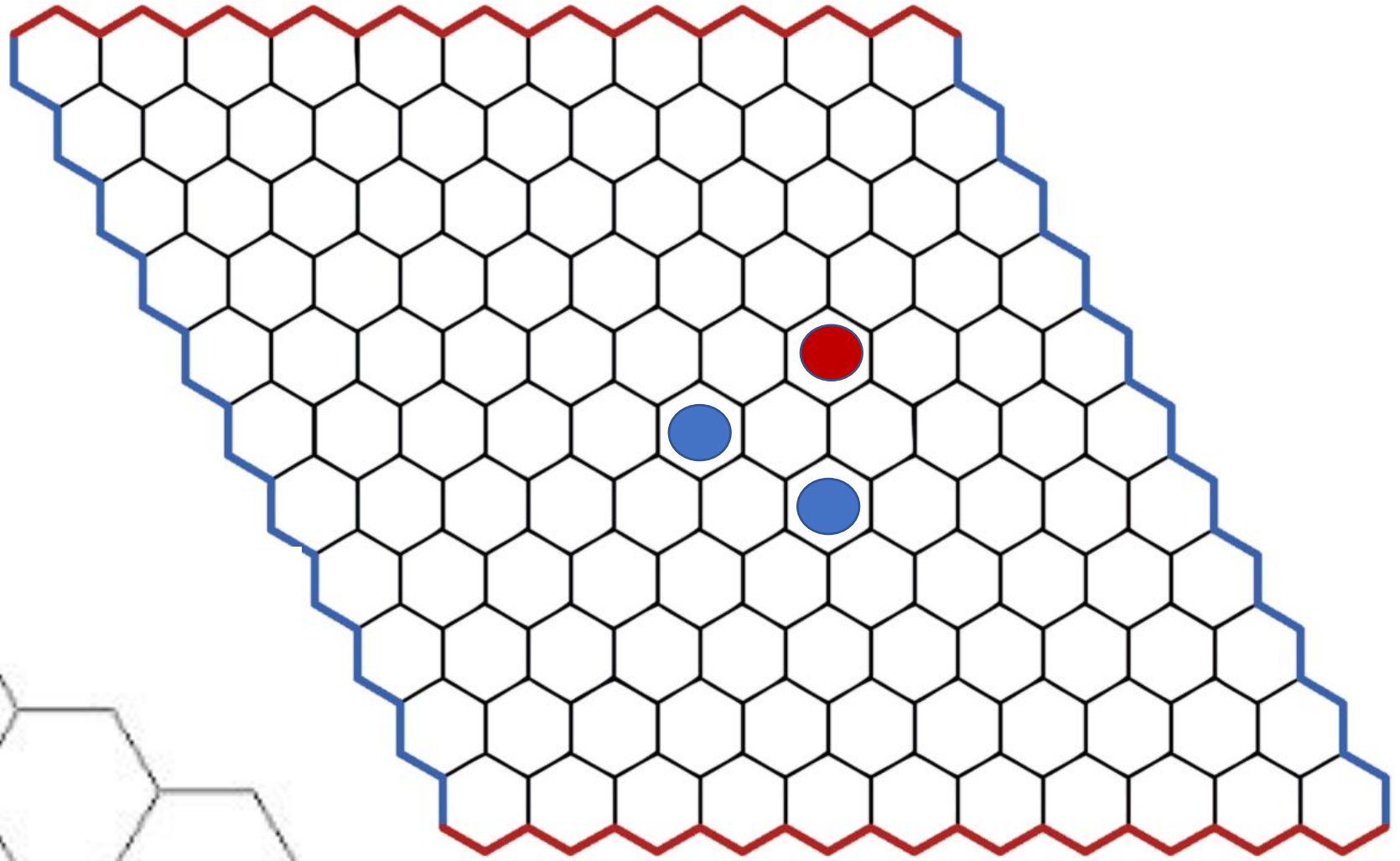
■

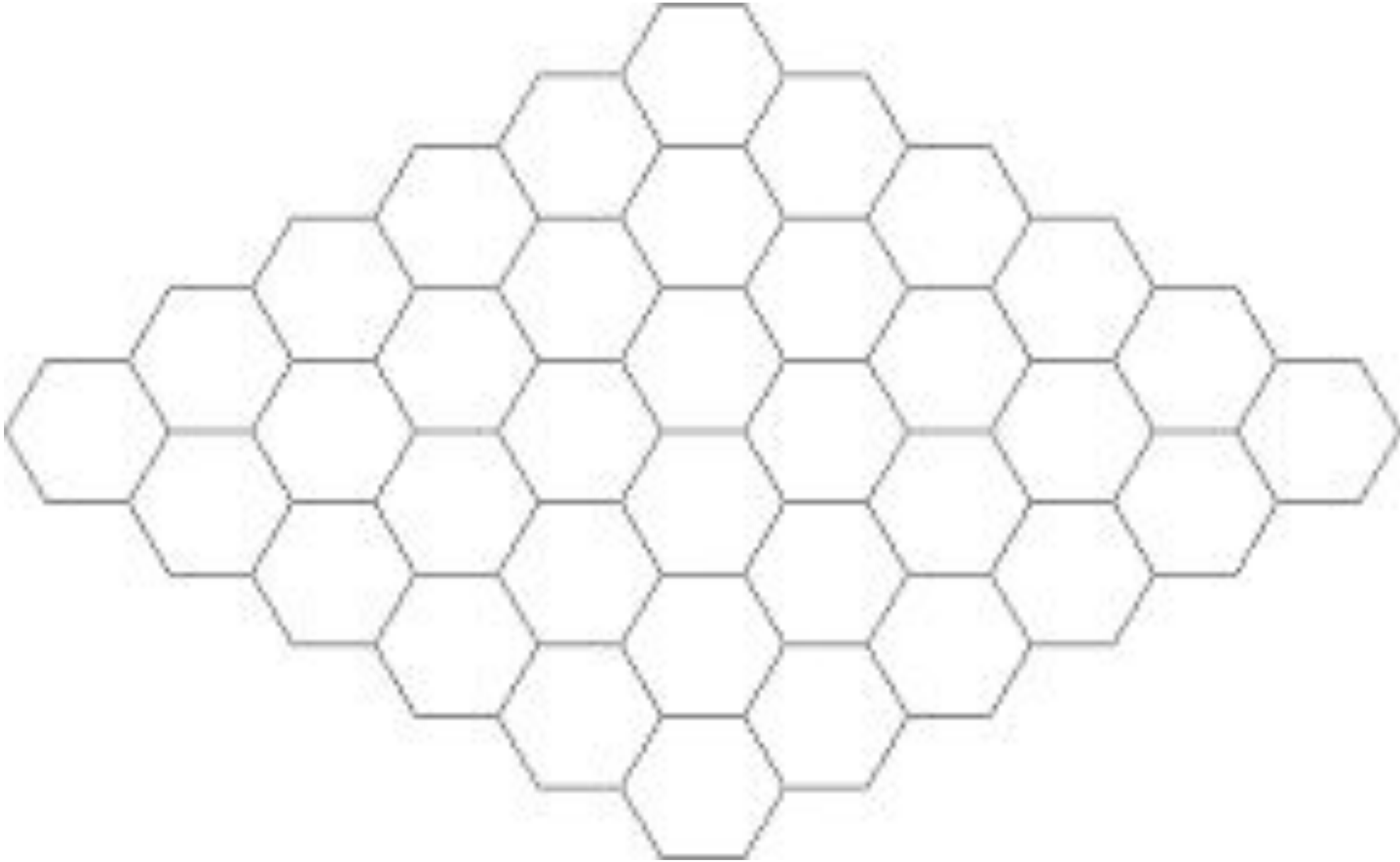
The Game of Hex

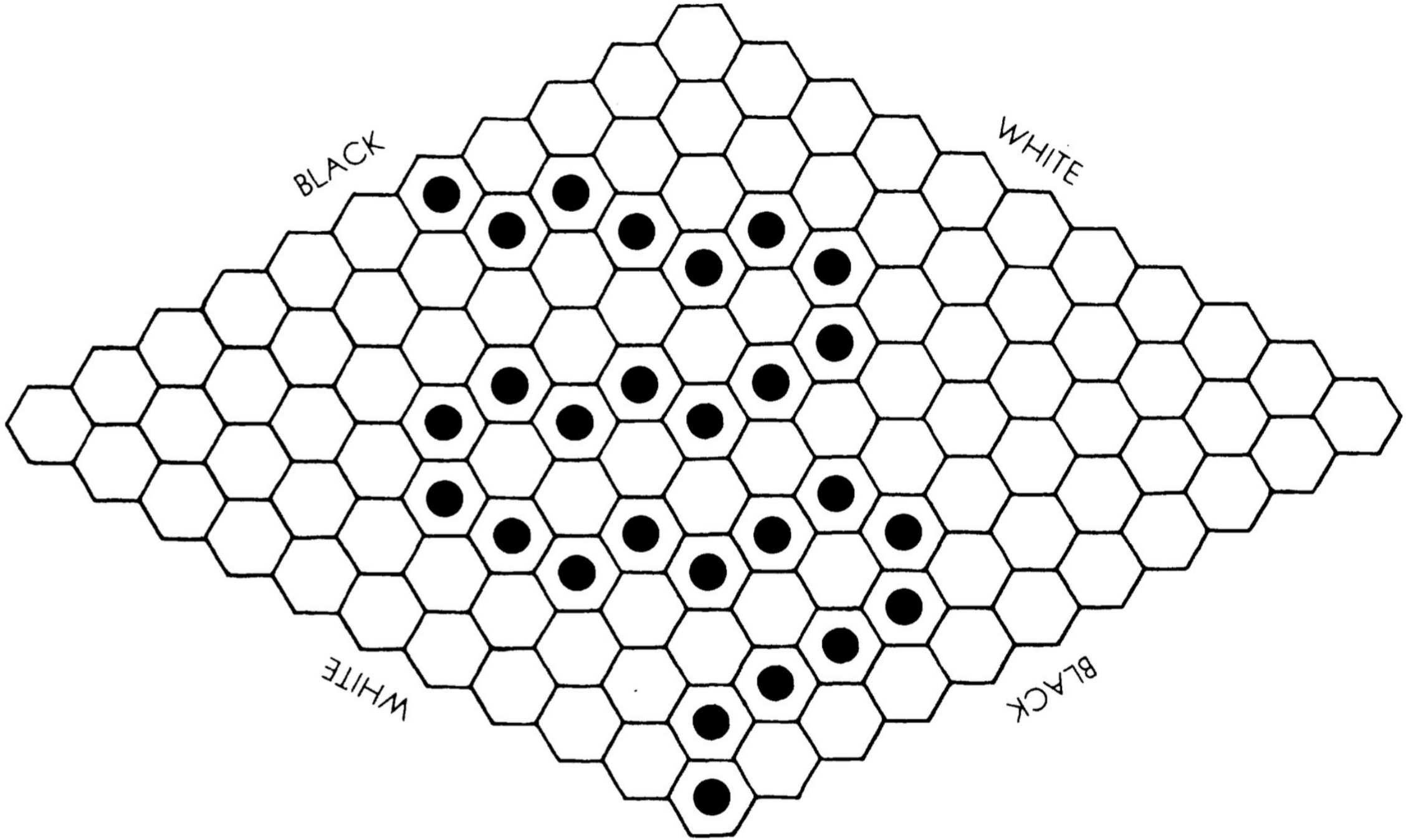
IT IS something of an occasion these days when someone invents a mathematical game that is both new and interesting. Such a game is Hex, introduced 15 years ago at Niels Bohr's Institute for Theoretical Physics in Copenhagen. It may well become one of the most widely played and thoughtfully analyzed new mathematical games of the century.

The Game





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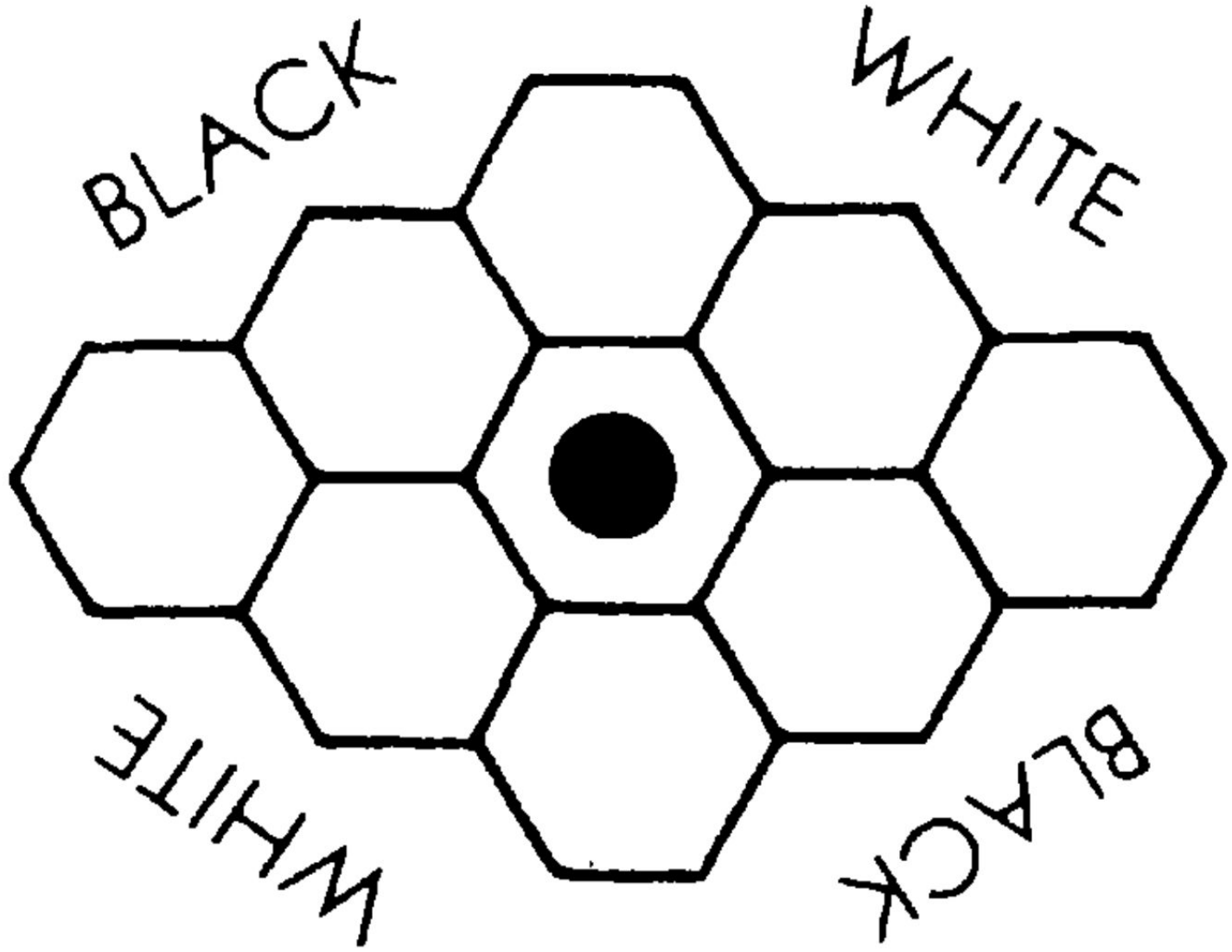
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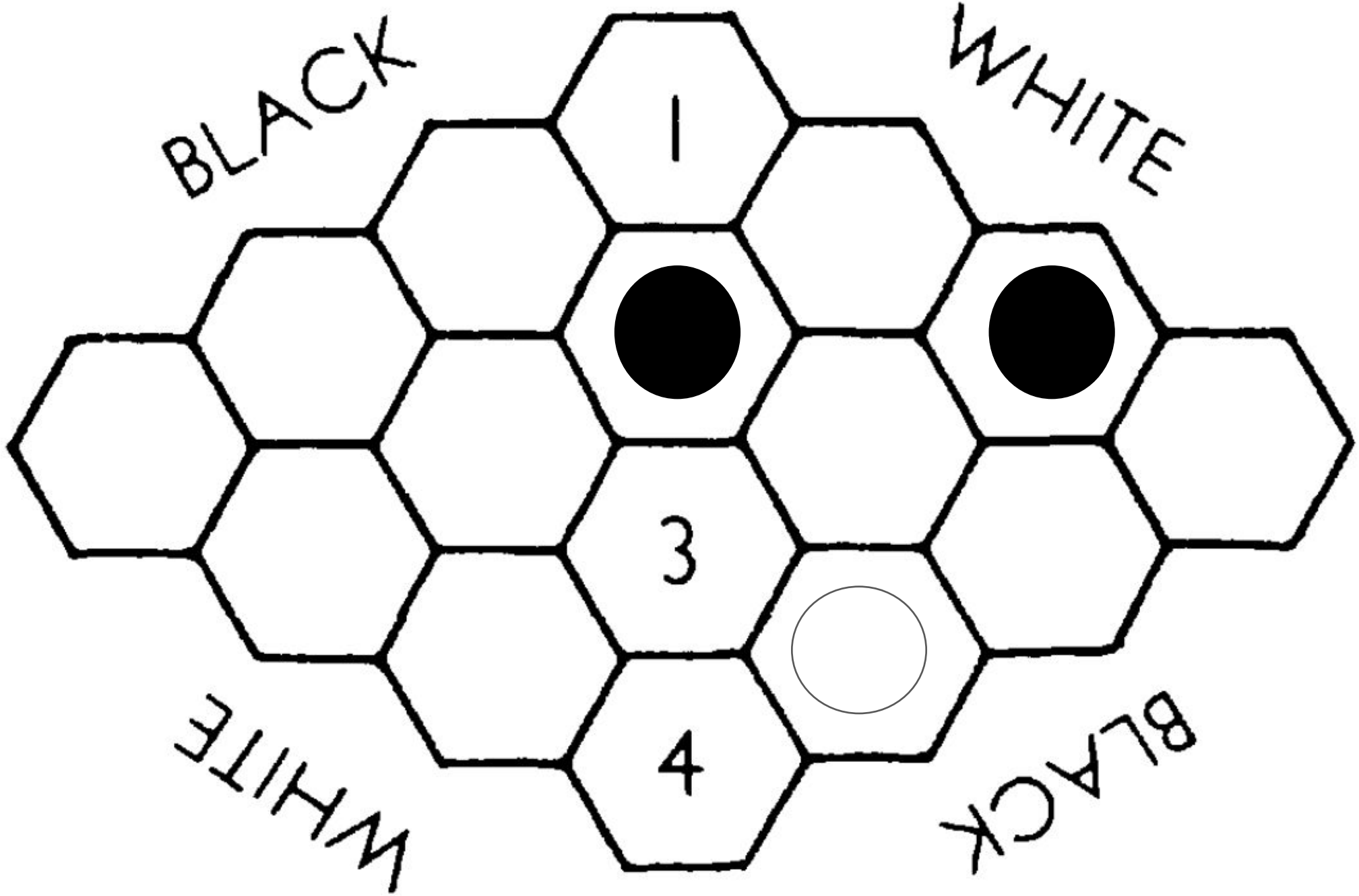
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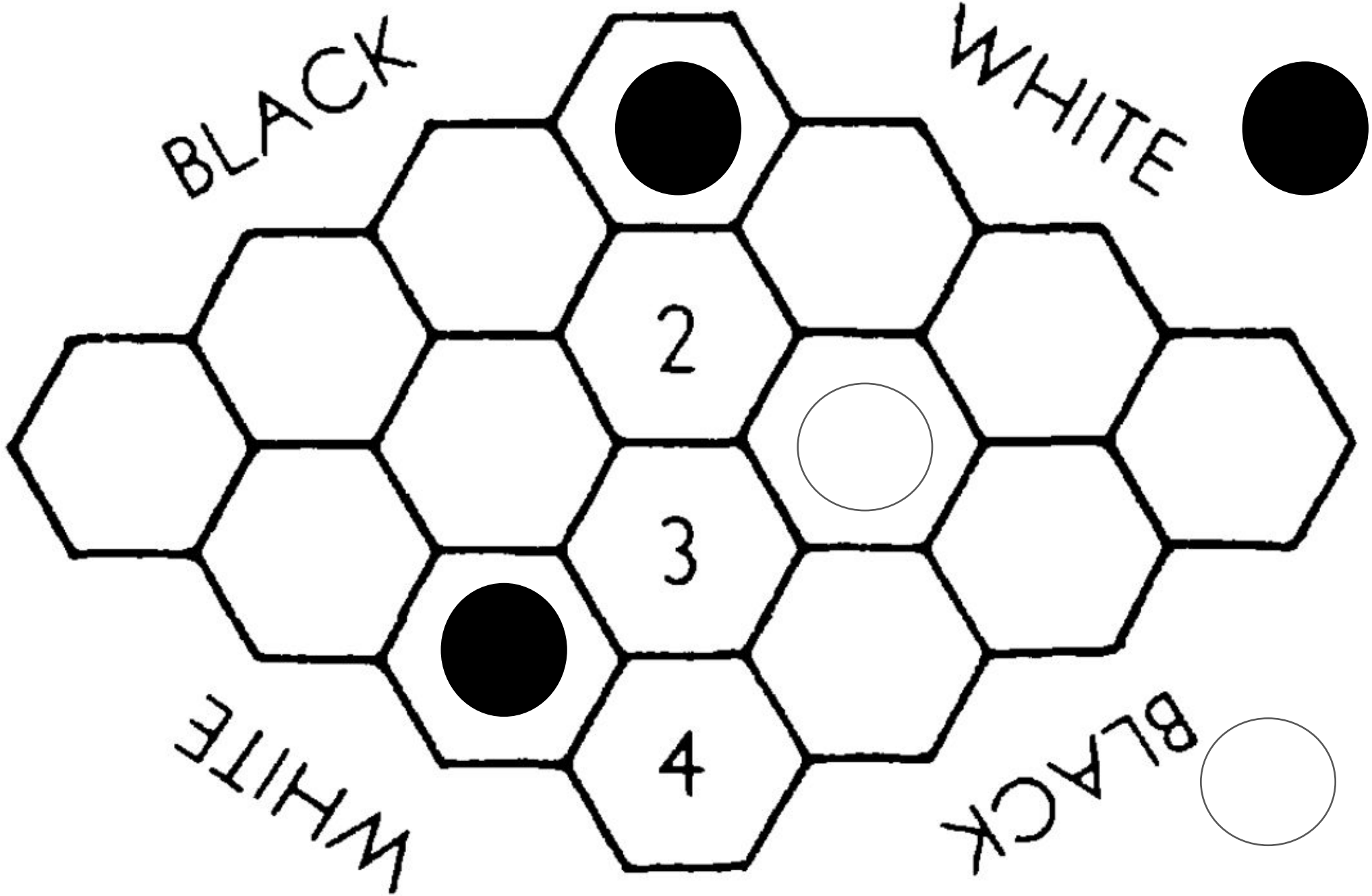
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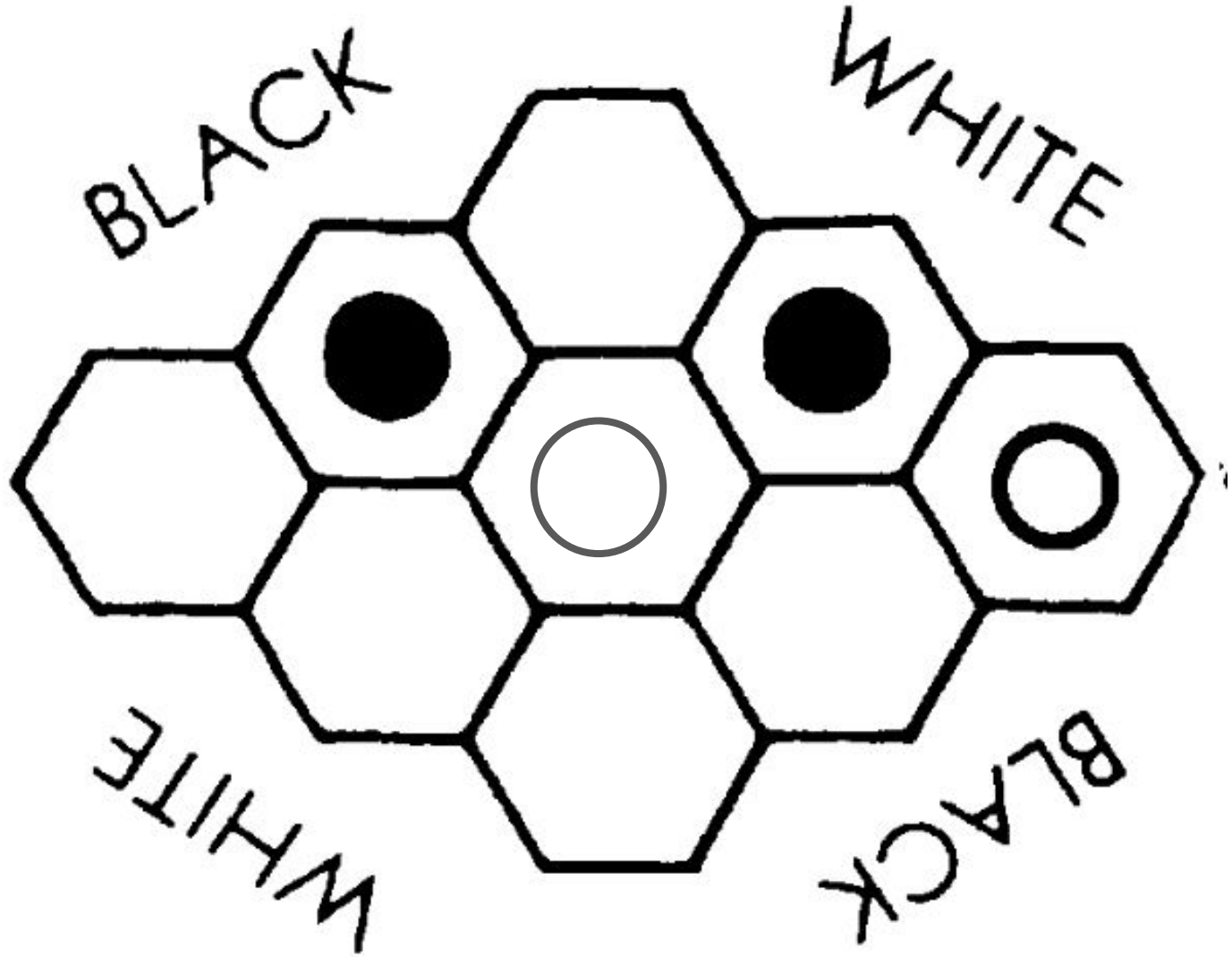
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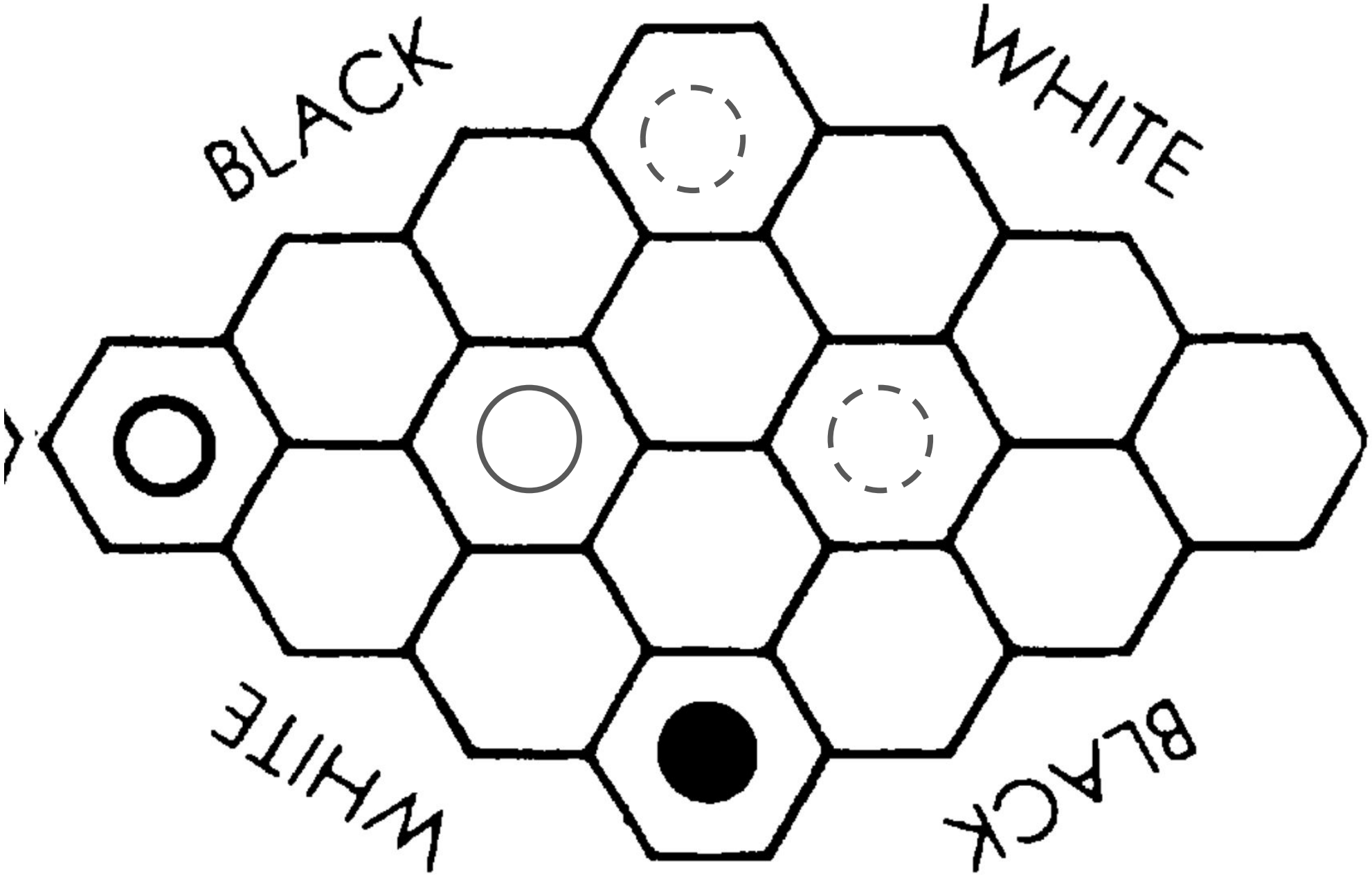
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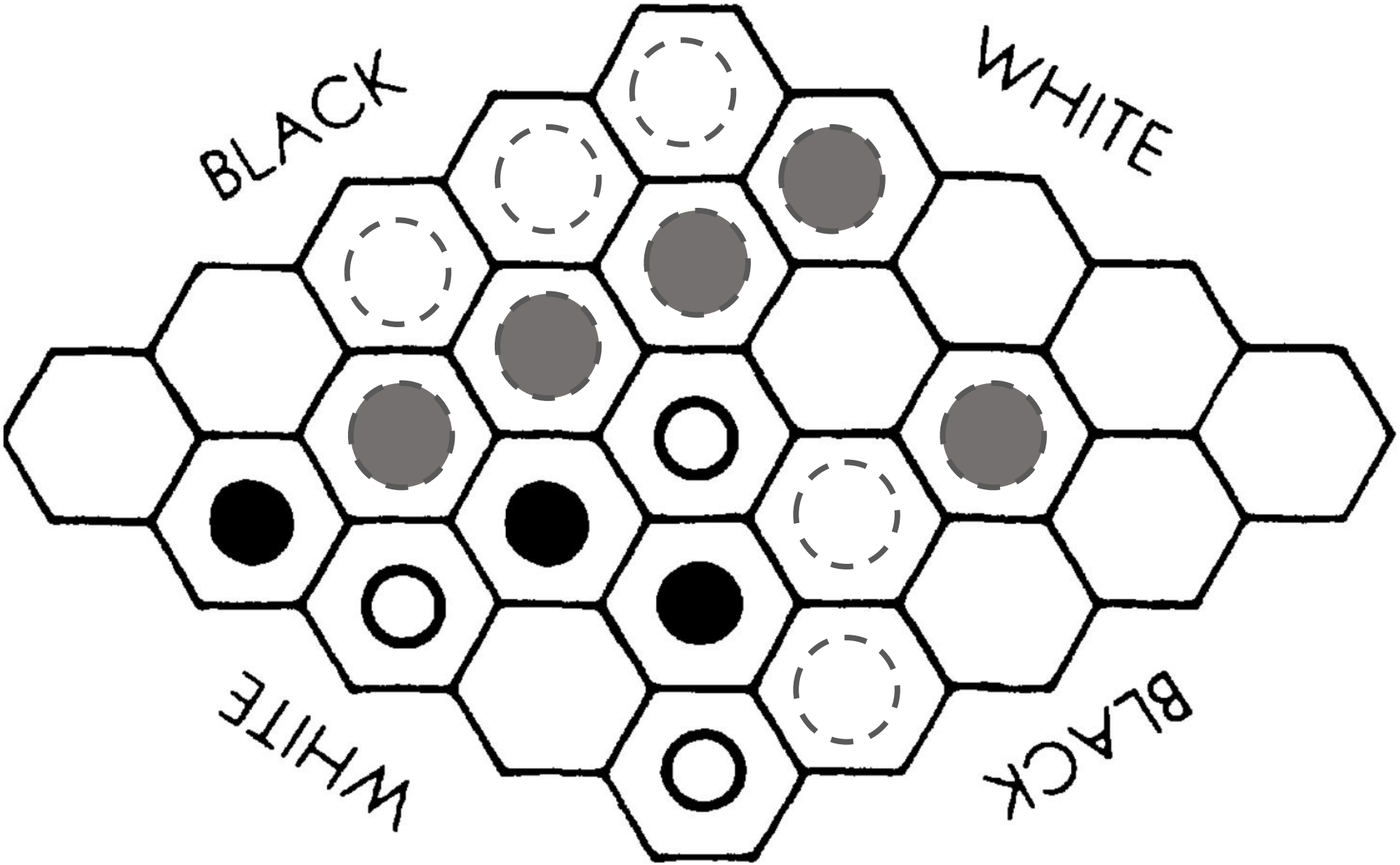
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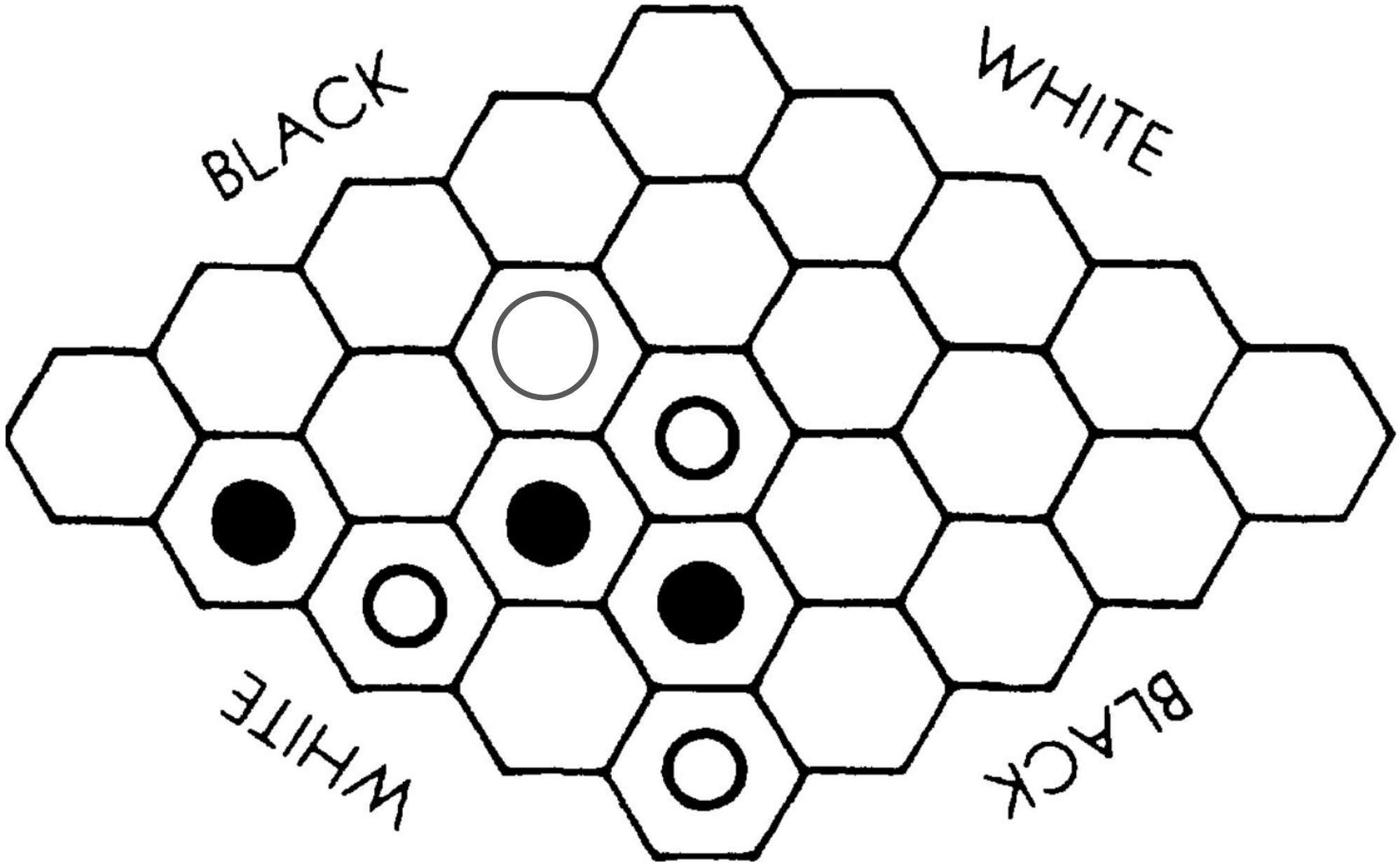
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Nash's Strategy Stealing Argument

Either the first player or the second player has a winning strategy

Assume it is the second player

First player makes a random mark

Second player must now play effectively as 1st player

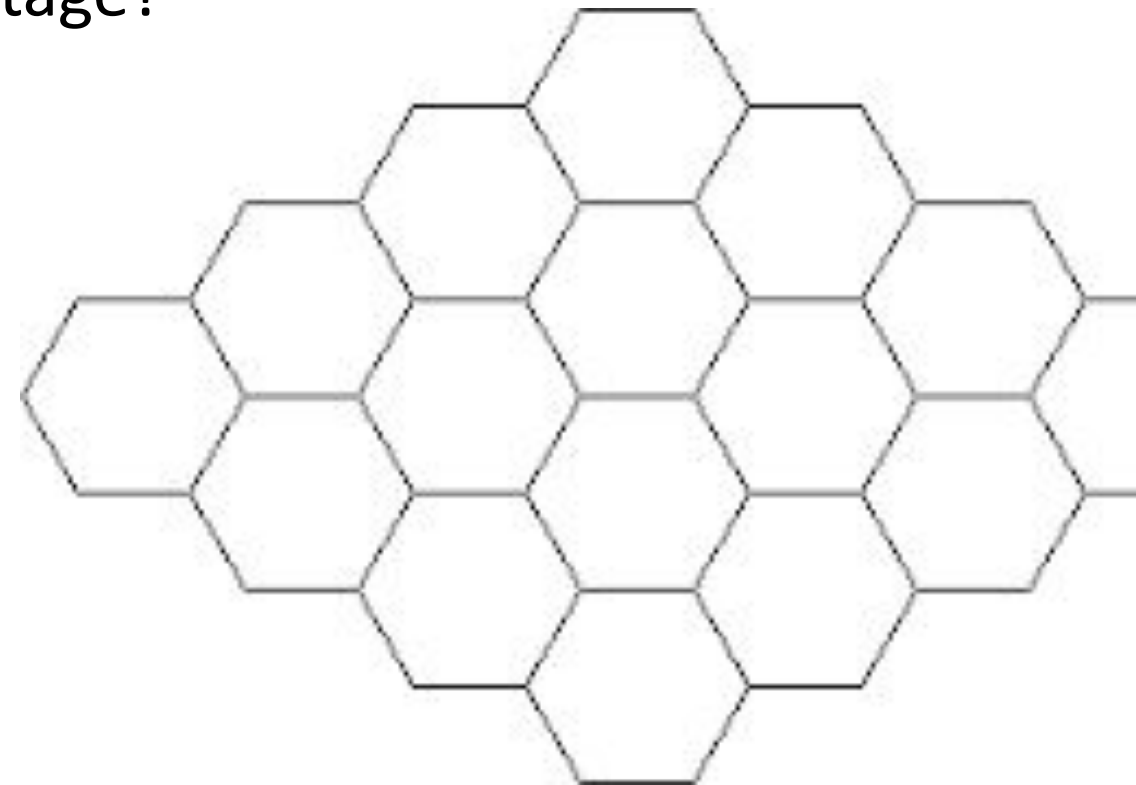
Having a mark on the board is always an asset

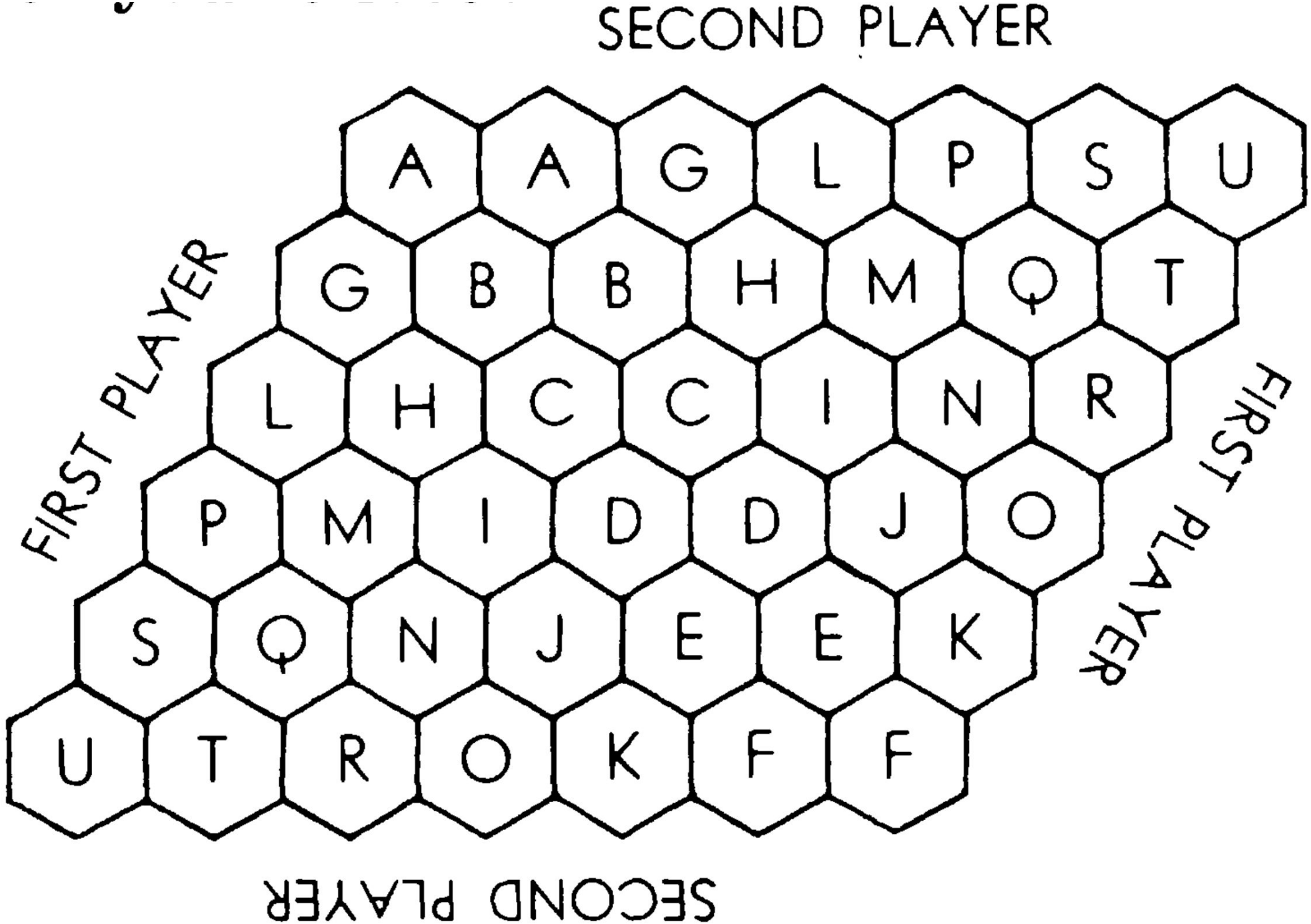
1st player adopts the winning strategy

What if the board were $n \times (n+1)$?

And the first player took the edges furthest apart?

Would this remove the first player advantage?




SECOND PLAYER
FIRST PLAYER
FIRST PLAYER
SECOND PLAYER
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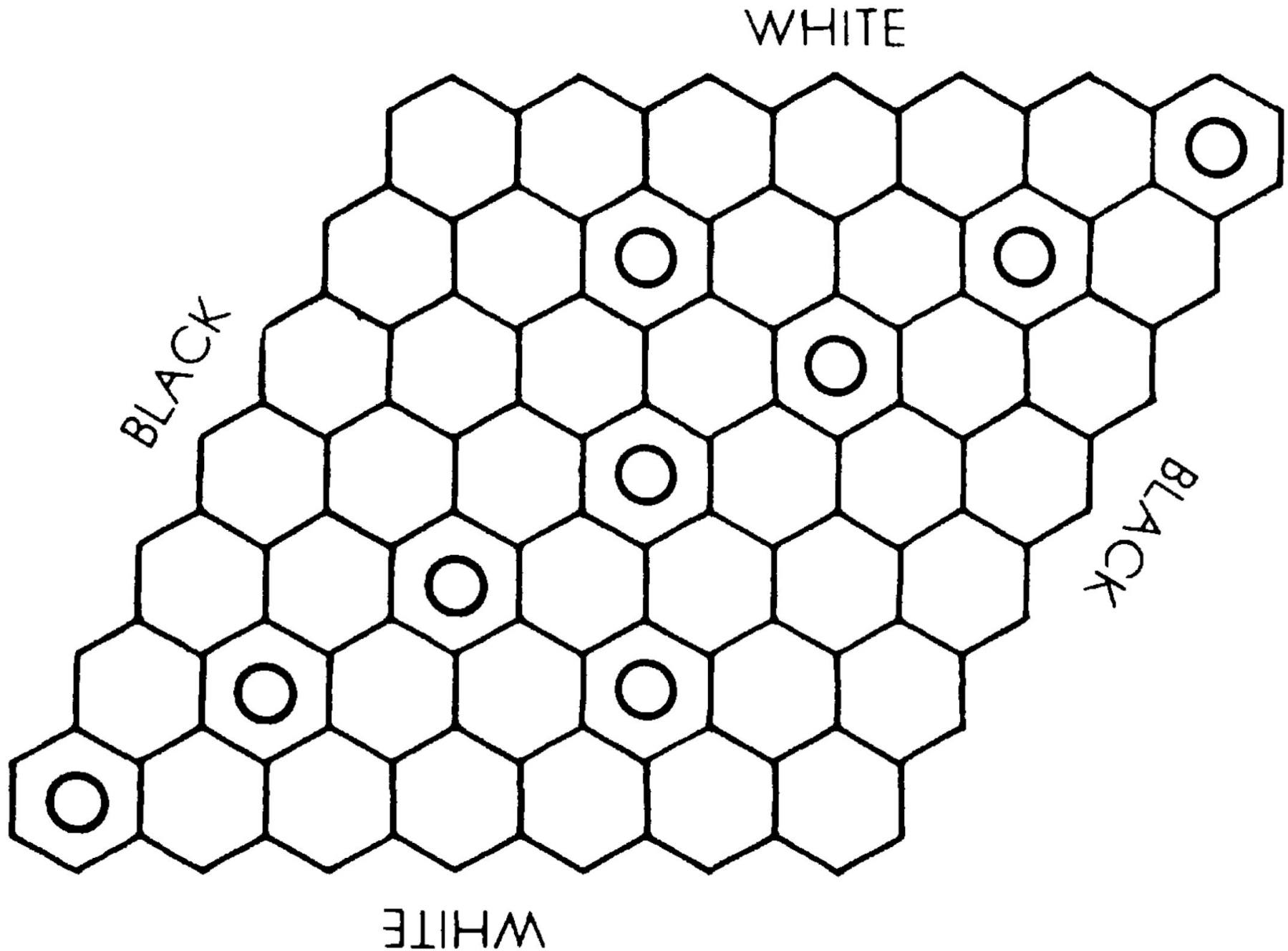
G B B H M Q T
L H C C I N R
P M I D D J O
S Q N J E E K
U T R O K F F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