



Martin Gardner, 1914 -- 2010

Day 8

Four Unusual Boardgames

Martin
Gardner's

th
Book of
Mathematical
Diversions from
Scientific American

5. Four Unusual Board Games

DURING the 1960's there was a remarkable upsurge of interest in mathematical board games. Today more people than ever before are playing the traditional games such as chess and experimenting with the new games that keep turning up in the stores. More mathematicians are analyzing the strategies of such games and more computers are being programmed to play them. In this chapter we examine four excellent but little-known board games, two new and two old. Their playing fields can easily be drawn on paper or cardboard, the rules of play are quite simple and everyone in the family will find the contests great fun.

The Military Game, as it is called in France, is a splendid example of a two-player game that combines extreme simplicity with extraordinary strategic subtlety. According to Édouard Lucas, who describes the game in Volume III (pages 105–116) of his celebrated *Récréations Mathématiques*, the game was popular in French military circles during and after the Franco-Prussian War of 1870–1871. It is a

pity that it has since been so completely forgotten; not one of the standard histories of board games even mentions it.

The board for the Military Game is shown in Figure 30 with the positions labeled to facilitate description. One player—we will call him White—has three men that are initially placed on the colored spots. A, 1, and 3. Black, his opponent, has only one man, which he places on spot 5 in the center. (Chess pawns can be used for men, or three pennies and a nickel.) White moves first and the game proceeds with alternate turns. Black may move in any direction along a line from one spot to a neighboring spot. White moves similarly, but only left, right or forward (straight ahead or diagonally), never backward. There are no captures. White wins if he can pin Black's piece so that it cannot move. This usually occurs with Black on spot B, but it can also occur with Black on spot 4 or 6. Any other outcome is a win for Black. He wins if he slips behind "enemy lines," making it impossible for White to pin him, or if a situa-

Military Game

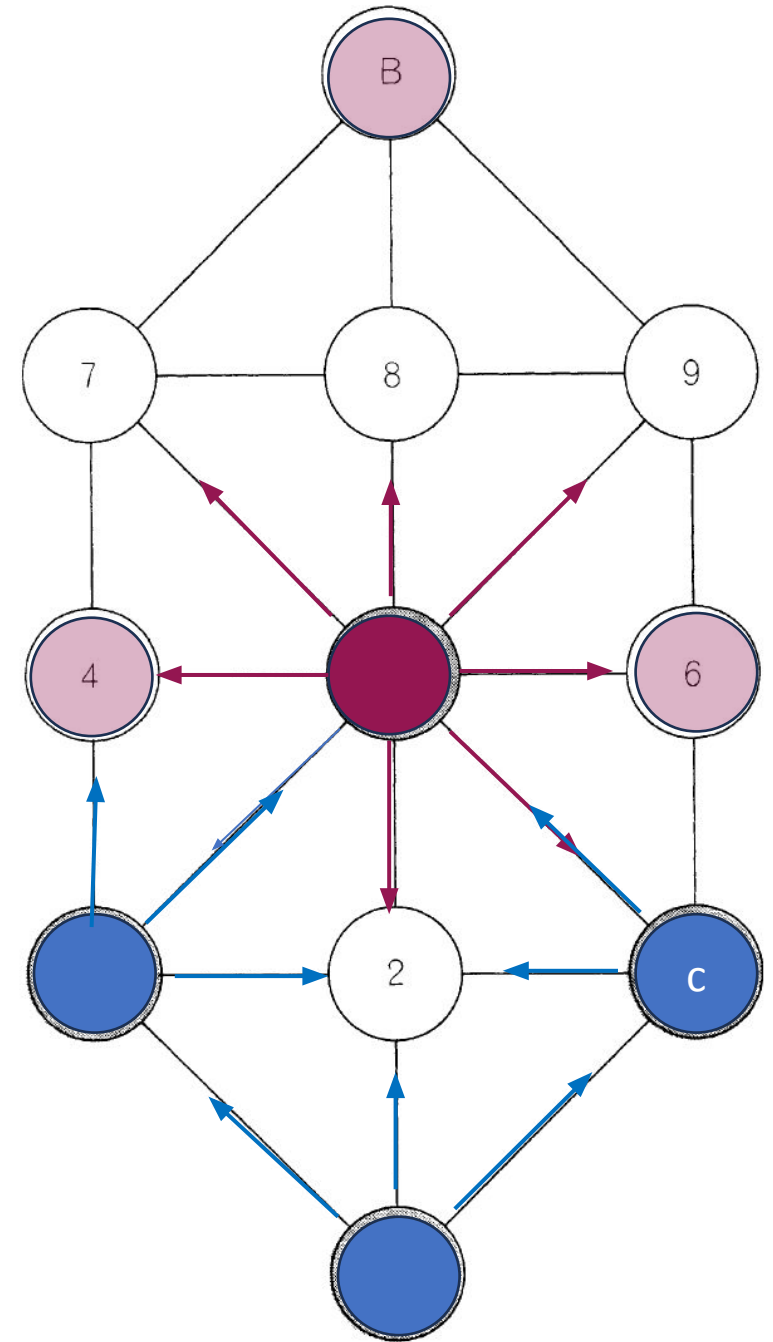
Blue starts

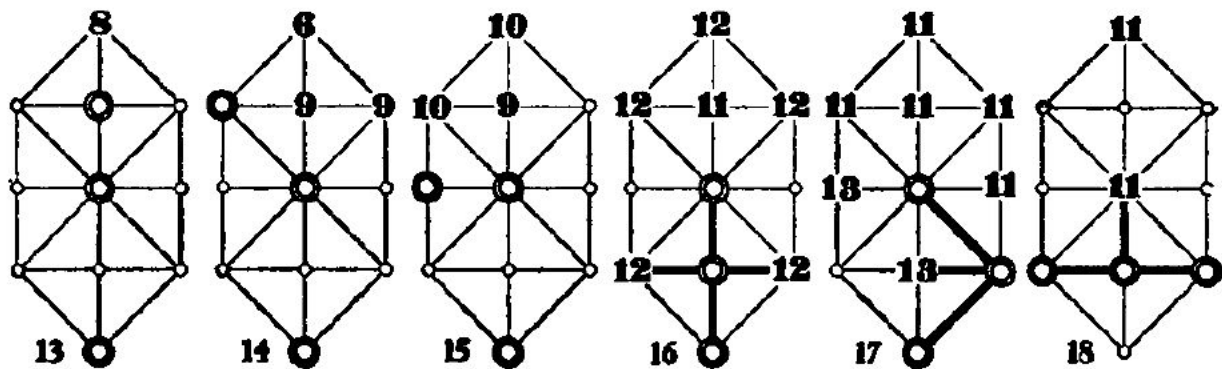
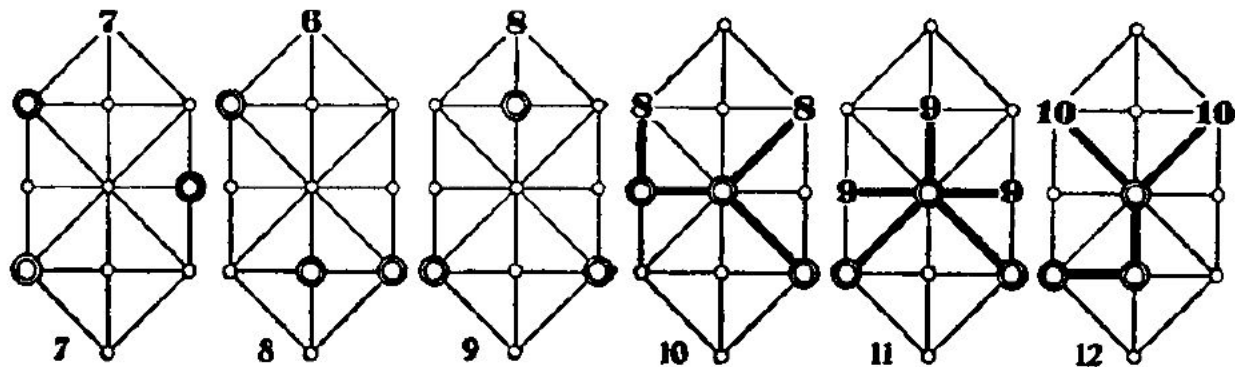
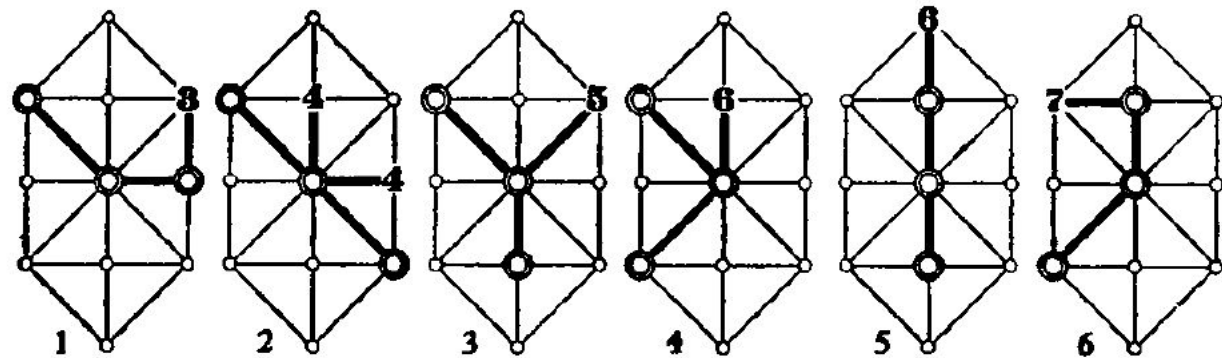
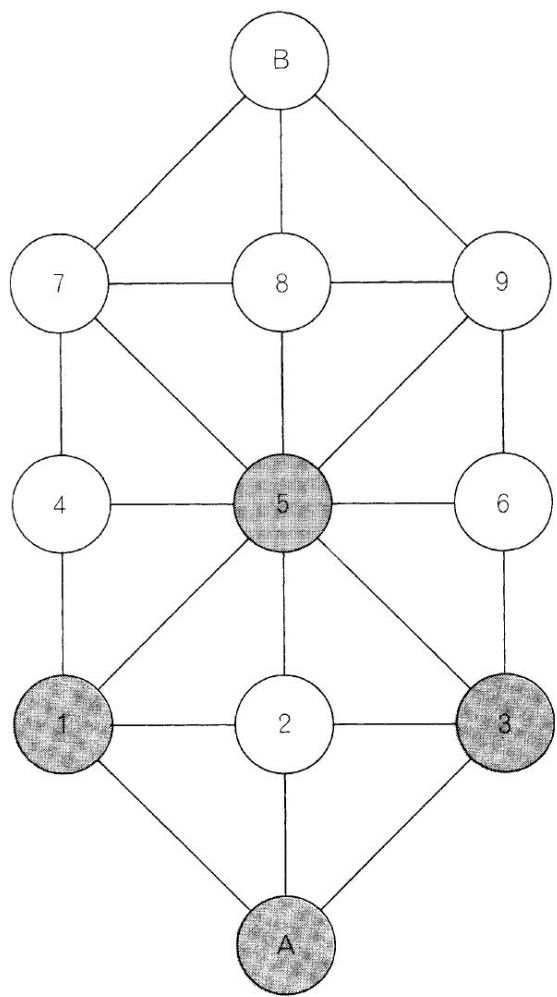
Blue cannot reverse

Red can move in any direction

Blue wins by pinning red

Red tries to 'slip behind enemy lines'



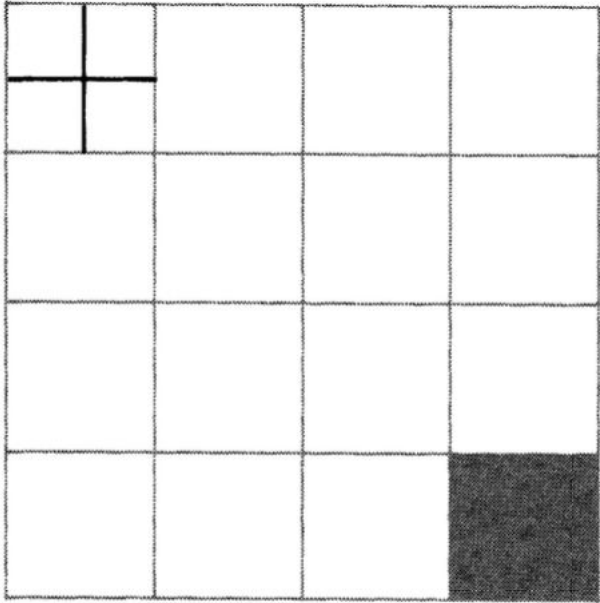


The configurations blue would like

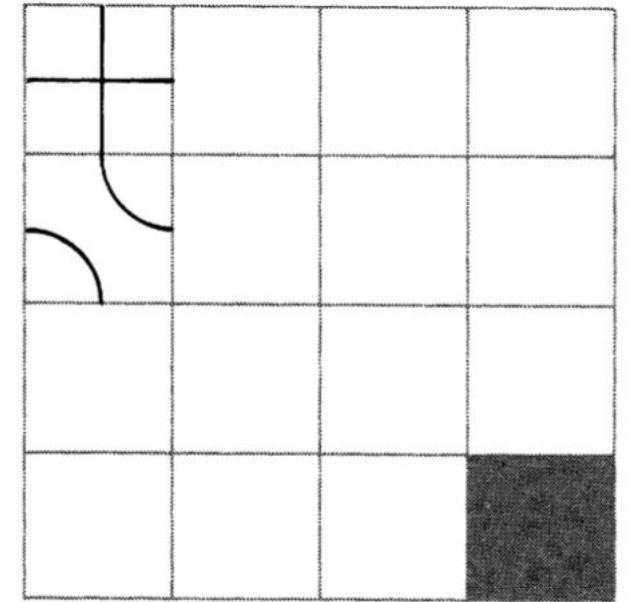
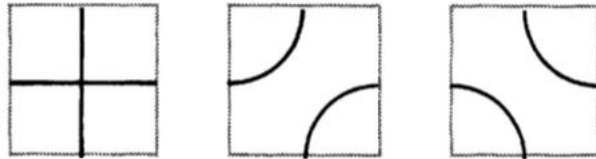
Can be played on any grid size, here 4 by 4

Black

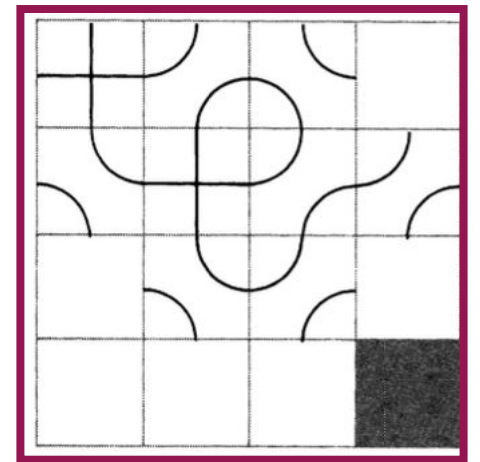
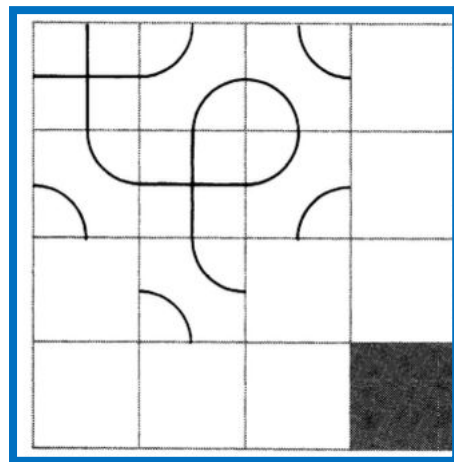
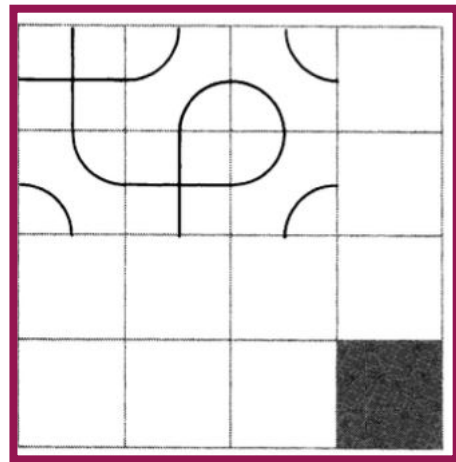
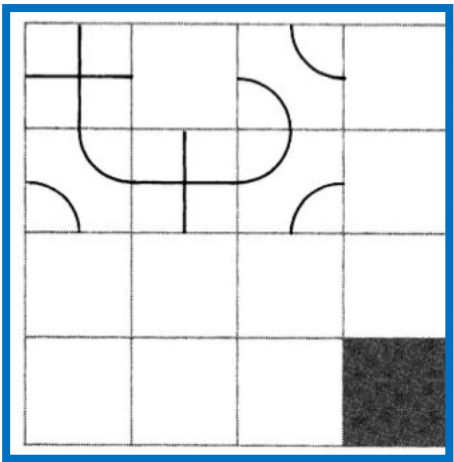
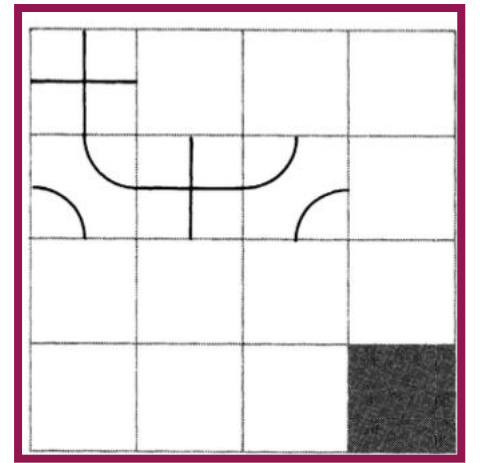
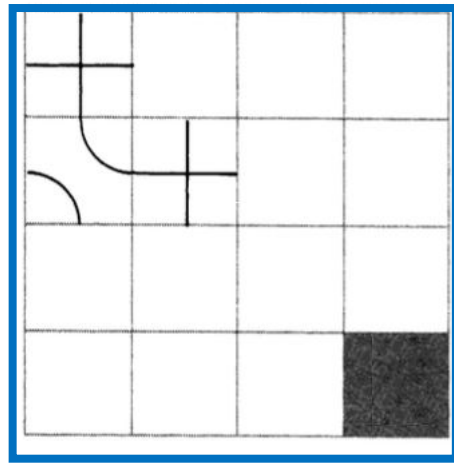
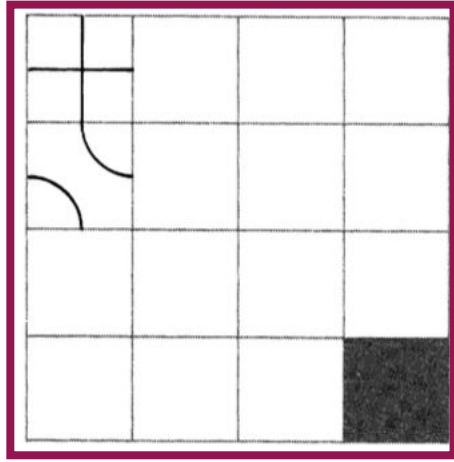
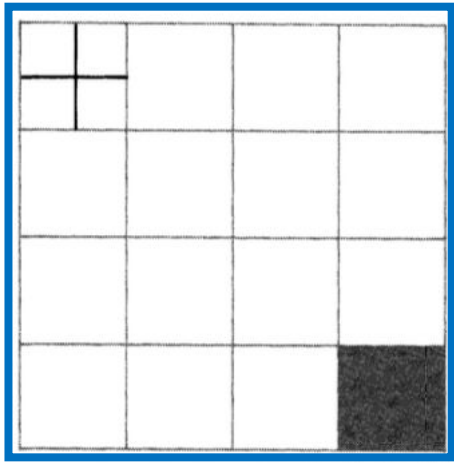
1st player makes cross top left



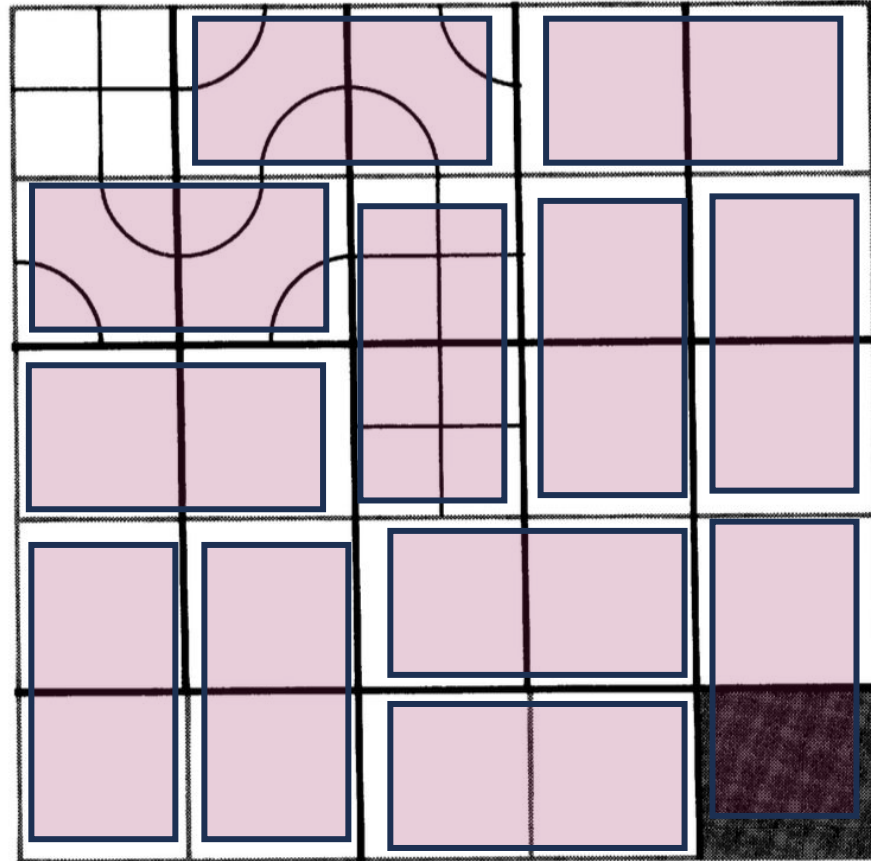
2nd player can draw one of these



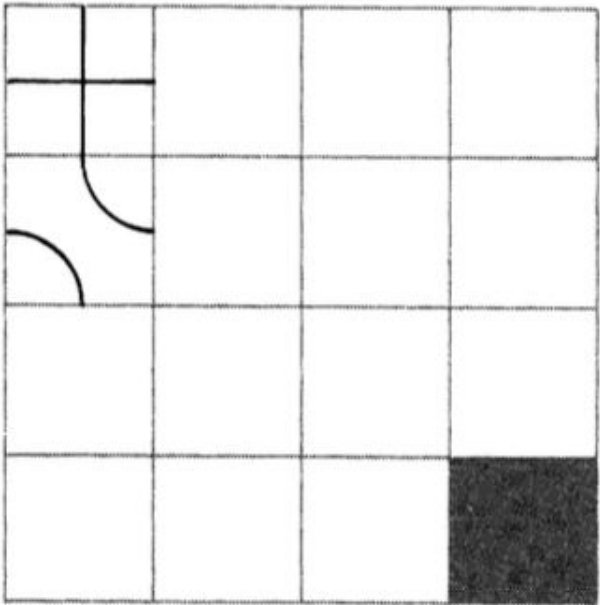
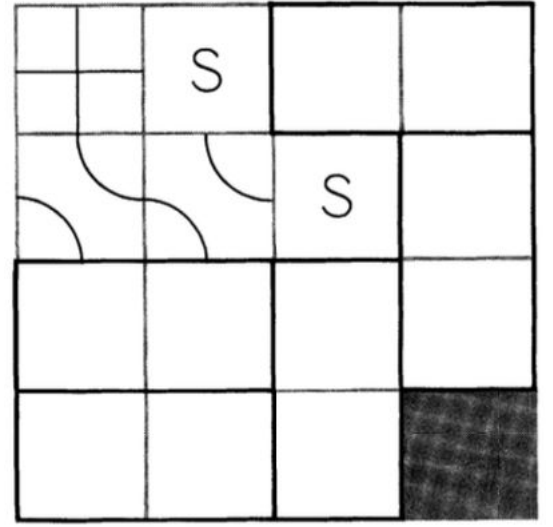
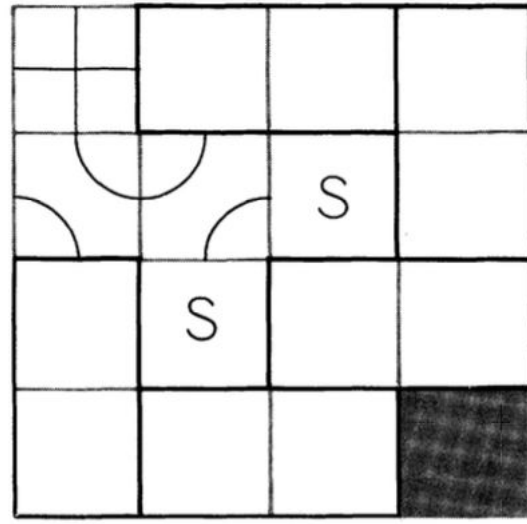
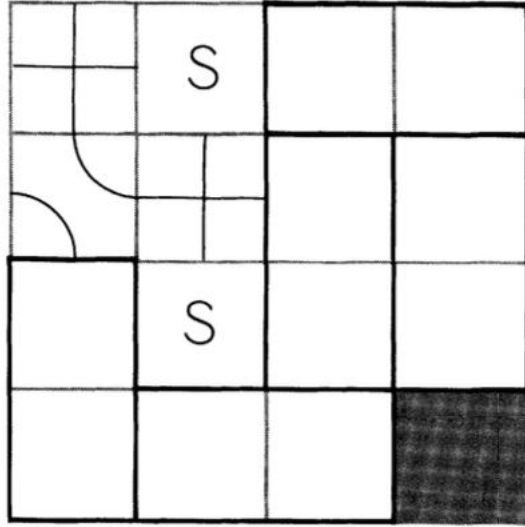
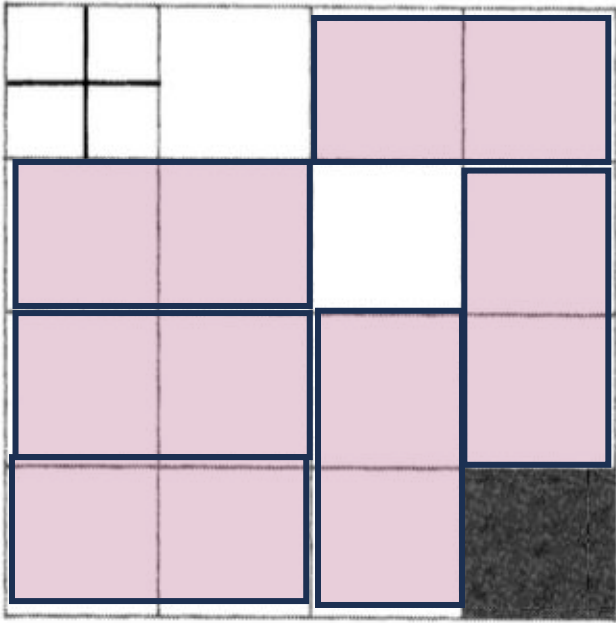
Player who connects to field wins



Is there a winning strategy for either player?

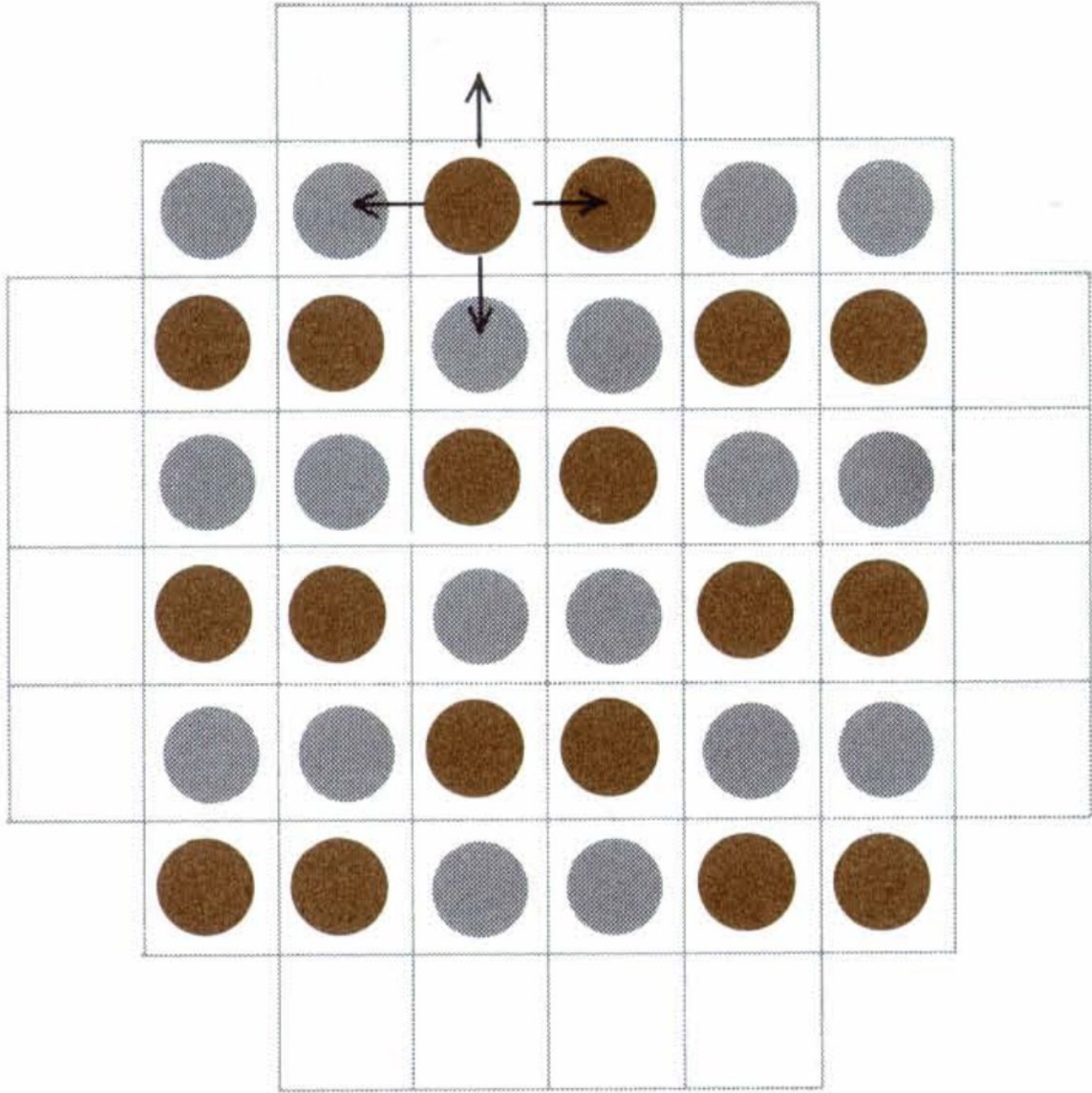


On square boards, 1st player wins if side is odd

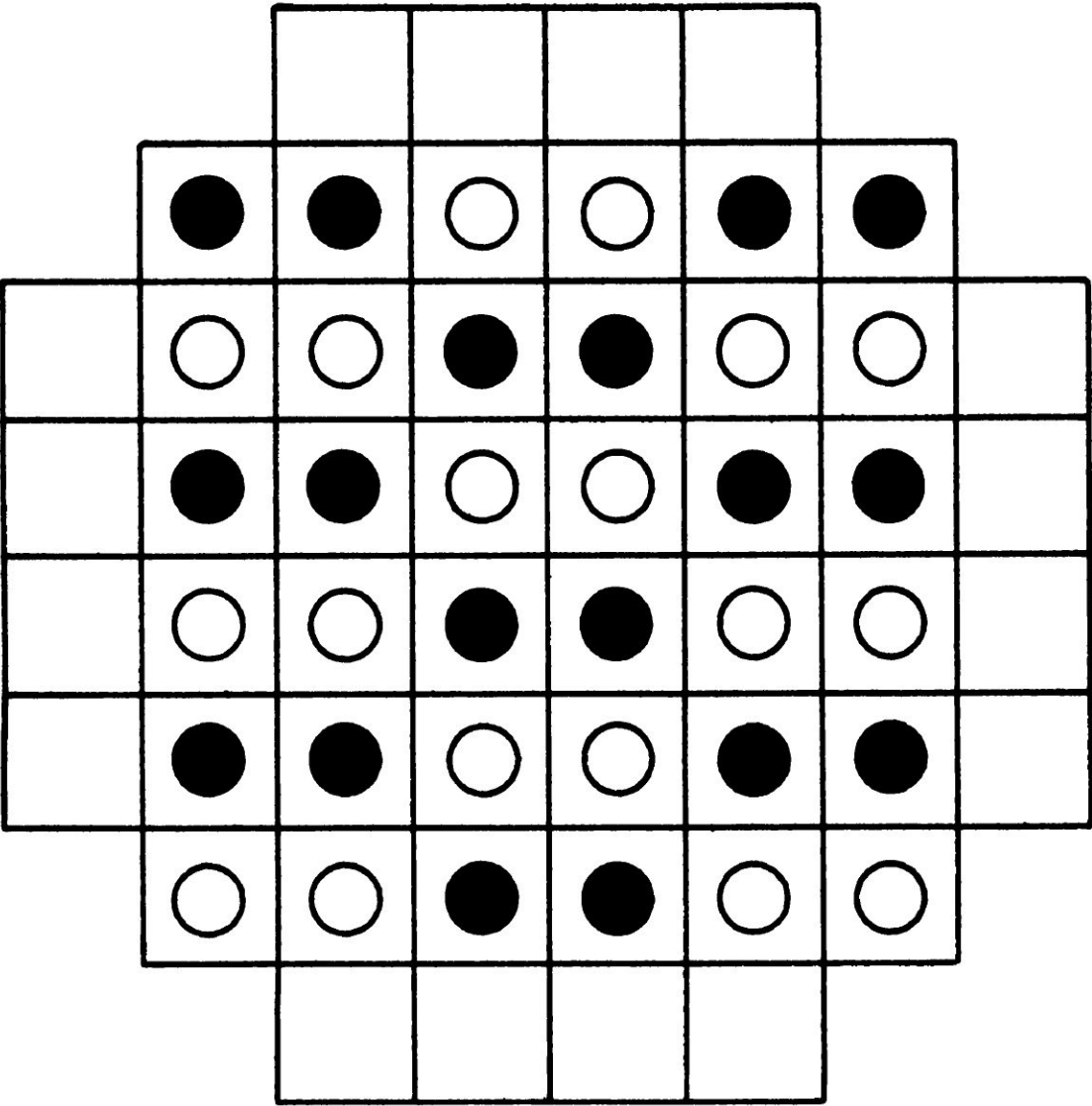


On square boards, 2nd player wins if side is even

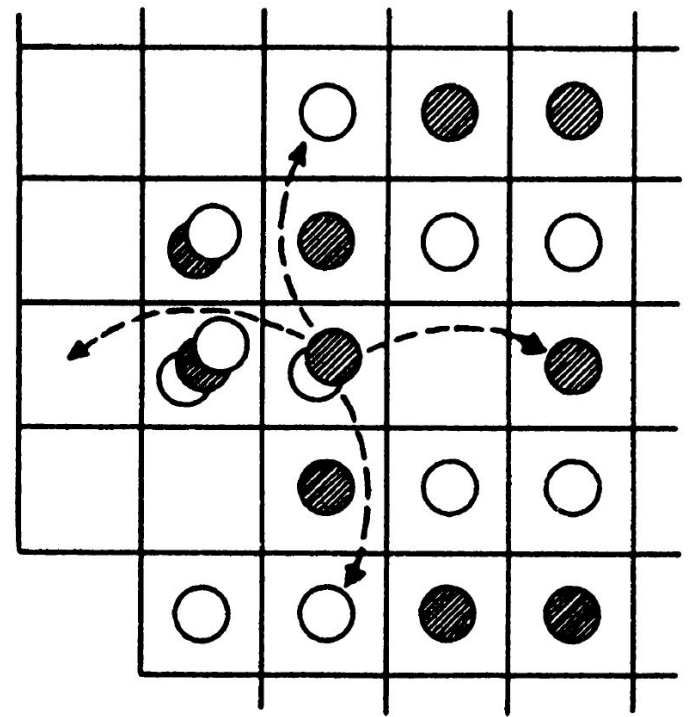
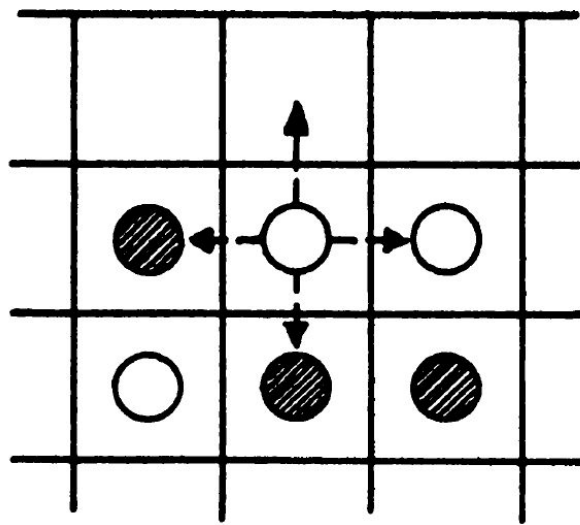
Focus or domination



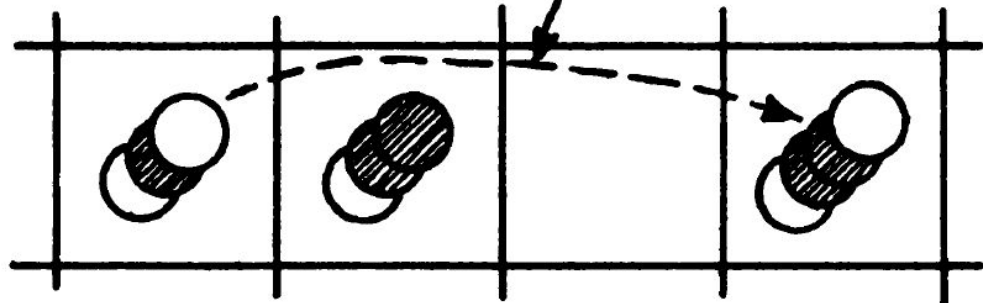
● Sits here



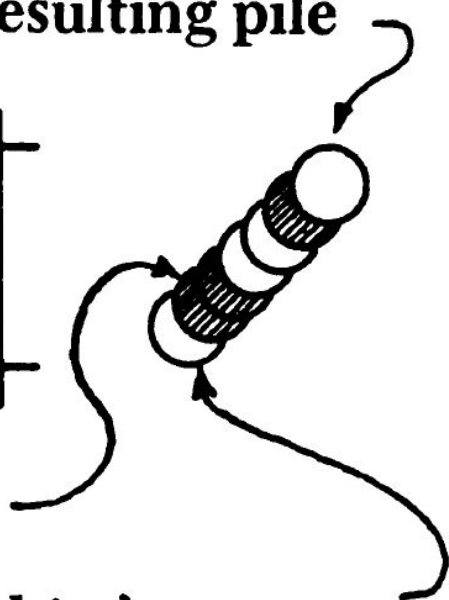
○ Sits here



Move by White



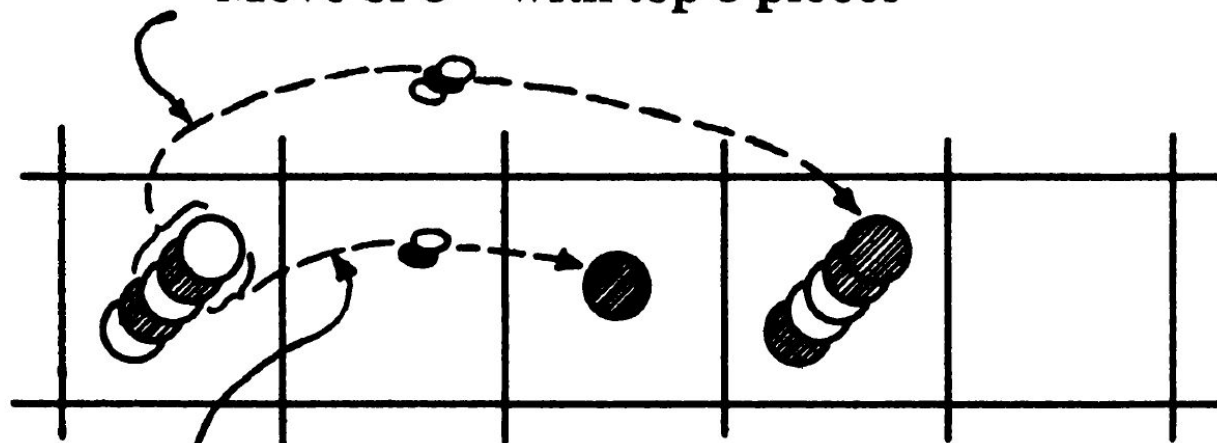
Resulting pile



This piece is captured

This piece goes to White's reserves

Move of 3—with top 3 pieces



Move of 2—with top 2 pieces

		13	14	15	16		
	22	23	24	25	26	27	
31	32	33	34	35	36	37	38
41	42	43	44	45	46	47	48
51	52	53	54	55	56	57	58
61	62	63	64	65	66	67	68
	72	73	74	75	76	77	
		83	84	85	86		

Imitation:

1st player moves 54-44

2nd player responds 45-55

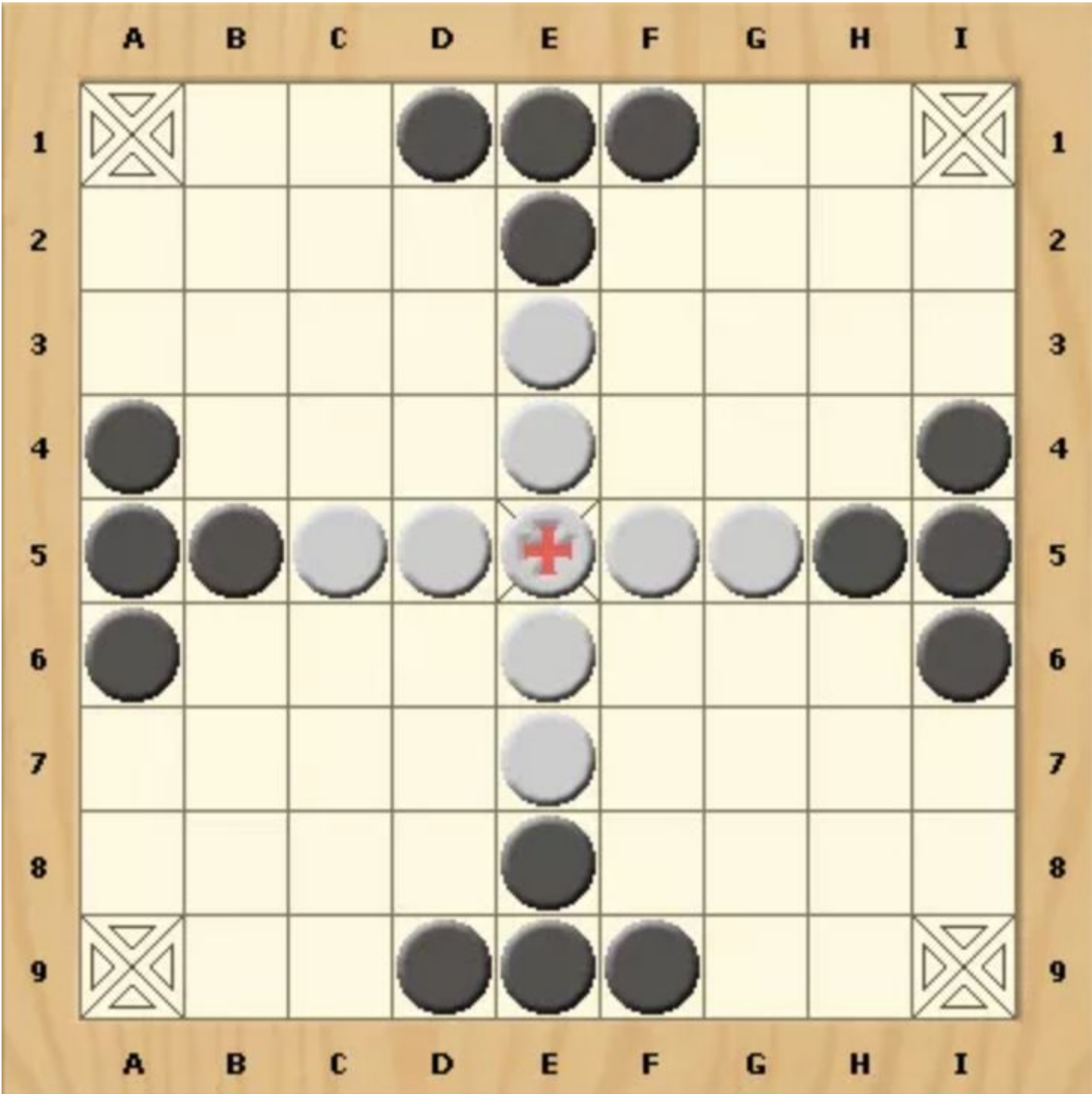
1st player moves 23-24

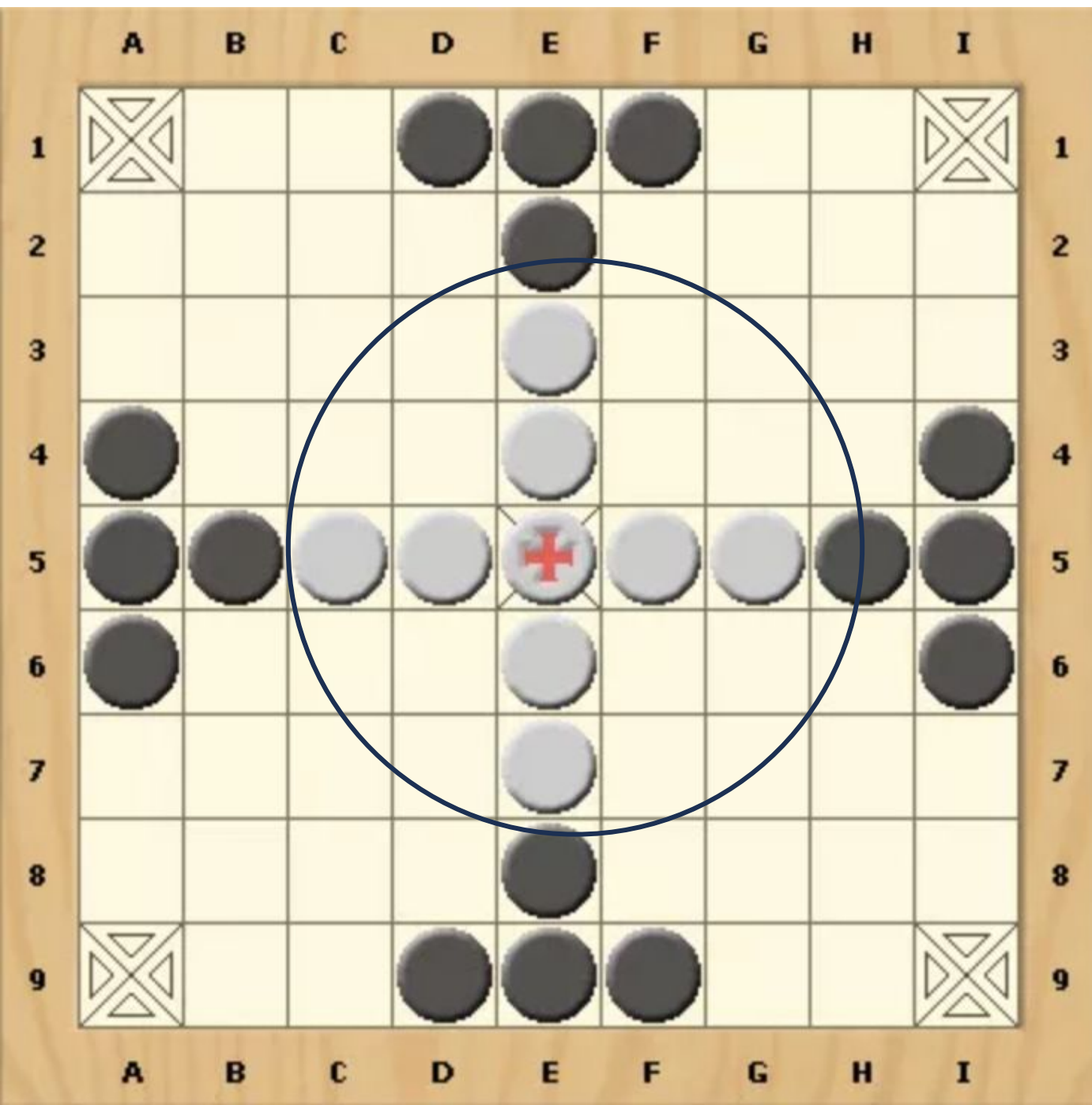
2nd player responds 76-75

Tablut

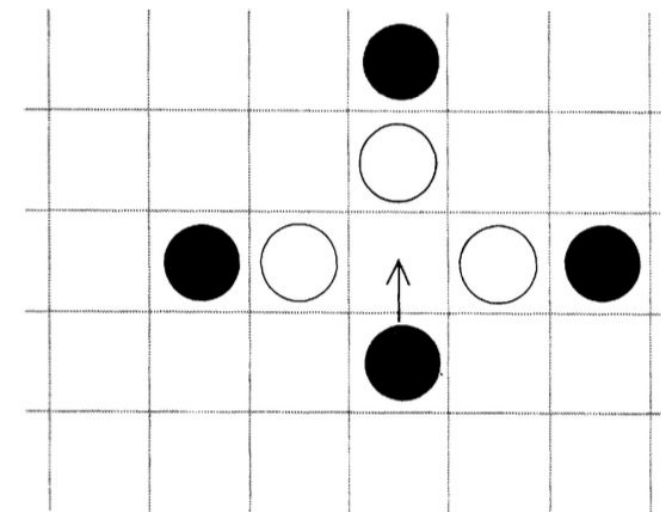
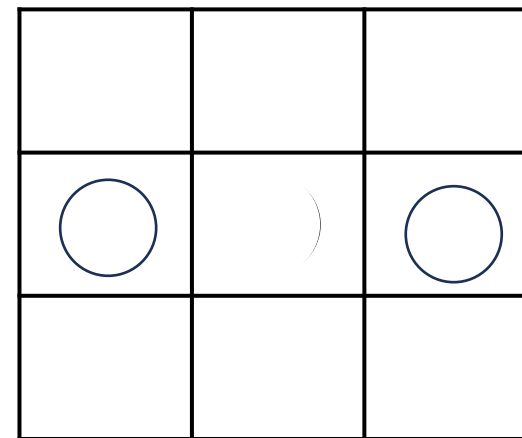


Pics from bgg





Either player may start



Black wants capture King

White wants King at perimeter

