DOTS AND BOXES

RULES AND INFORMATION: Dots and Boxes (also known as Boxes, Squares, Paddocks, Pigs in a Pen, Square-it, Dots and Dashes, Dots, Smart Dots, Dot Boxing, or, simply, the Dot Game) is a pencil and paper game for two players (or sometimes, more than two) first published in 1889 by Edouard Lucas.

Starting with an empty grid of dots, players take turns, adding a single horizontal or vertical line between two unjoined adjacent dots. A player who completes the fourth side of a $1 \times 1$ box earns one point and takes another turn. (The points are typically recorded by placing in the box an identifying mark of the player, such as an initial). The game ends when no more lines can be placed. The winner of the game is the player with the most points.

The board may be of any size. When short on time, 2 boxes (created by a square of 9 dots) is good for beginners, and $5 \times 5$ is good for experts.

The diagram below shows a game being played on the $2 \times 2$ board. The second player (B) plays the mirror image of the first player’s move, hoping to divide the board into two pieces and tie the game. The first player (A) makes a sacrifice at move 7; B accepts the sacrifice, getting one box. However, B must now add another line, and connects the center dot to the center-right dot, causing the remaining boxes to be joined together in a chain as shown at the end of move 8. With A’s next move, A gets them all, winning 31.

(Text and image copied from Wikipedia)
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Here are some grids of various sizes for you to play “Dots and Boxes” on. Can you find strategies for good play? Do strategies change for grids with even vs. odd dimensions?

2 × 2

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3 × 3

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4 × 4

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5 × 5

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