

**Abstract.**

An  $m,n,k$ -game is an abstract board game in which two players take turns in placing a stone of their color on an  $m \times n$  board, the winner being the player who first gets  $k$  stones of their own color in a row, horizontally, vertically, or diagonally.  $m,n,k$ -game is also called a  $k$ -in-a-row game on  $m \times n$  board. Thus, tic-tac-toe is the 3,3,3-game and connect-4 is a 4-4-4 game.

**What is it ?**

4,4,4-Game is a 2-player strategy game played on 4 X 4 board in which a player has to get 4 stones of his color in a row either horizontally, vertically or diagonally in order to win. Here we have taken 'X' as black stone and 'O' as white stone.

**Rules :**

- ➔ Player X plays first placing a “X” at any cell on the board.
- ➔ Player O plays next placing a “O” at any unoccupied cell.
- ➔ Each player takes turns in placing the respective symbol on the unoccupied cells.
- ➔ The player with 4 crosses (X) or 4 zeroes (O) along a row either horizontally, vertically or diagonally wins the game.
- ➔ If no such occurrence takes place, the game ends in a draw.