Kakuro Puzzle

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Contents

Introduction to Kakuro Puzzle

- Created by Jacob E. Funker in the 1950s and first published in Dell Magazines
- Originally called “Cross Sums” and is descended from arithmetic puzzles and crosswords
- The puzzle was then brought to Japan and eventually became known as *Kakuro* as referred to by the Japanese players
- Kakuro Puzzles are logic puzzles that combine crosswords with simple addition
- Come in many variations today but the original and most common is a 16x16 grid

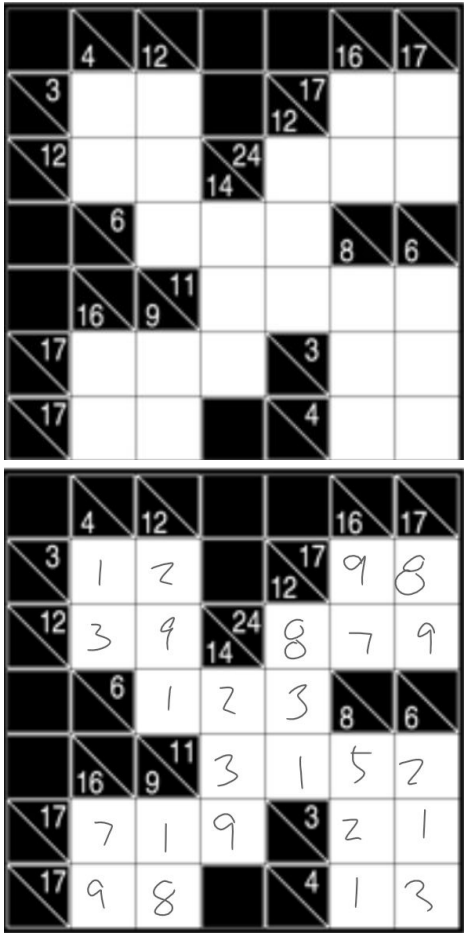
How It Works? (steps to solve)

Basic Rules:

- you can only enter numbers 1-9
- sum of each horizontal block is solved with the clue on its left
- sum of each vertical block is solved with the clue on its top
- no same number may be used in the same block

Tips to Solve:

- to start the puzzle, do the shorter blocks and the smaller values first
- make notes in the empty squares of the possible values in the squares if you do not know the exact value
- never guess and make sure to double check your answers



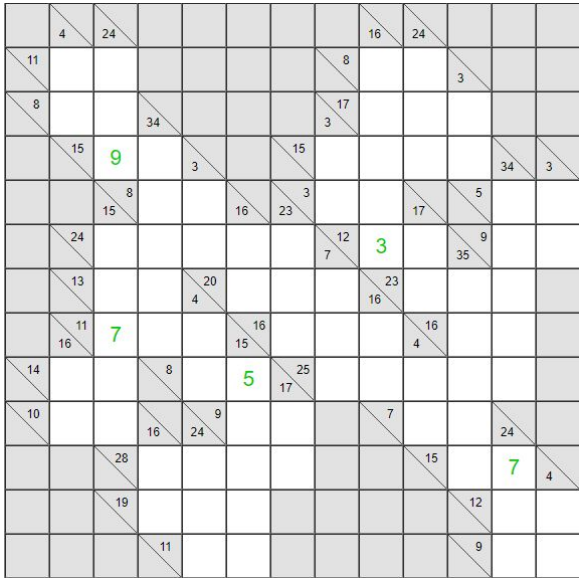
Picture Source: Kakuro rules and info. The Art of Puzzles. (2019, January 26). Retrieved March 20, 2023, from https://www.gmpuzzles.com/blog/kakuro-rules-and-info/#:~:text=The%20puzzle%20was%20created%20around,famous%20under%20its%20foreign%20name.

How to solve Kakuro puzzle - Method 1

- Easy two-block number lock downs: 3 (1, 2), 4 (1, 3), 16 (7, 9), 17 (8, 9).
- Complete order: two-block row/column > 2x2 blocks > 2x3 > 3x3 > ...
- Use all the evidence and carefully place down the numbers.
- Do your best to not guess, hard to fix later on.
- If no clue, make an educational guess to complete the lowest order.
- Know where you start guessing, easier to backtrack if it doesn't work.
- If lost, better to start anew than stuck forever.
- If success, go on to the next level. More practice, get better.
- [3x3] [4x4] [5x5] [9x8] [13x13] [15x15] [20x20] [15x30] [25x25] [30x30]
- Link to kakuro puzzle: https://www.kakuros.com/

How to solve Kakuro puzzle - Method 2

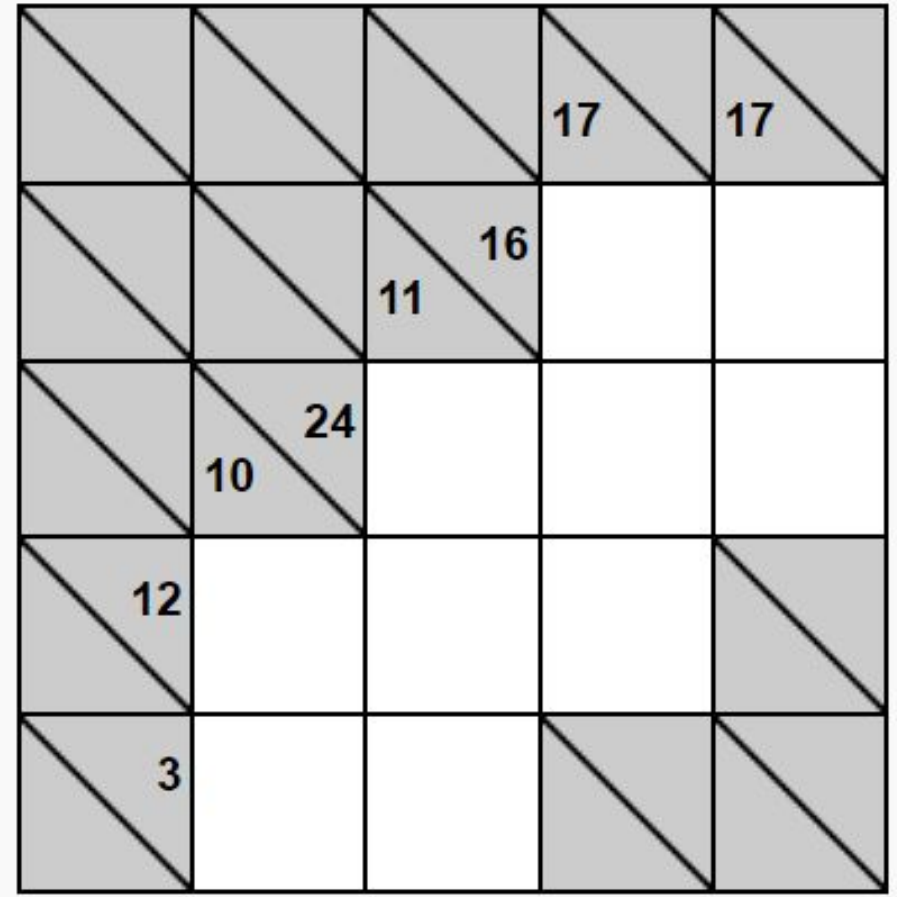
- We can approach this puzzle using divide and conquer, by finding linking squares
- What are linking squares? A square that connect a block of squares to another block
- This method is more useful when working with bigger puzzles that are bigger than 5x5 since you can turn them into smaller puzzles like a 2x2 or 3x3
- After we can add the each value from the rows and each value from the column
- If we are trying to find the column value then column - rows = linking square value
- If we are finding a row value then row - column = linking square
- To solve the rest of the squares is the same way you'd solve any simple 2x2 or 3x3



Solving An Example

Using Method 1:

- 2 block nums:
  - 3, 4, 16, 17
- 3 block nums:
  - 6, 7, 23, 24
- 4 block nums:
  - 10, 11, 29, 30



Questions

1. What was the Kakuro puzzle originally known as?
2. Which arithmetic operation is used to solve Kakuro puzzles?
3. What are some of the basic rules to solving Kakuro puzzles?

Citations

- (98) Kakuro - Rules & Strategies - YouTube
- Kakuro Generator (kakuro-online.com)Kakuro rules (conceptispuzzles.com)
- Kakuro history. Conceptis Puzzles. (n.d.). Retrieved March 20, 2023, from https://www.conceptispuzzles.com/index.aspx?uri=puzzle%2Fkakuro%2Fhistory
- https://theory.tifr.res.in/~sgupta/kakuro/simple.html
- https://www.kakuroconquest.com/?sg=4
- https://www.kakuros.com/

Thank you for listening!