Why Question # 59 – Were Sudoku puzzles used in history?

Magic Squares:
- A magic square is an arrangement of numbers in a square so that the numbers in all rows, all columns and both diagonals have the same sum.
- Earliest known magic square is Chinese around 650 B.C. It was called “Loh-Shu” or “scroll of the river Loh. The Loh-Shu was the typical 3x3 but had patterns rather than numerals.
- In the 7th century, the Arab mathematicians had the magic square. The first magic squares of order 5 and 6 showed in Baghdad in 983 CE.
- The order-4 magic square in Albrecht Durer’s engraving Melencolia I is believed to be the first in European art. The sum 34 can be found in the rows, columns and diagonals.

Latin Squares:
- 13th century, known in Arabic as wafq majazi, is a square containing cells in which each row and each column have the same set of symbols. This is different from the magic square where there is no repetition.
- Leonhard Euler, a Swiss mathematician, showed how to construct magic squares with a certain number of cells. He named them Latin squares because he used Roman numerals.
- A century later Frenchman, MB Meyniel created a 9x9 grid based on the Latin square. It appeared in the French newspaper La France on July 6, 1895. Other newspapers competed to create better models until 1914 when WWI put an end to it.
- In the 1979, Howard Garns (a 74 year old retired architect from Indiana) developed the Latin square similar to the modern Sudoku. It was published by Dell Pencil Puzzles and Word Games as the Number Place.

Sudoku (soo-DOH-koo):
- Sudoku is a logic-based number-placement puzzle. The objective is to fill a 9x9 grid with digits so that each column, each row and each of the nine 3x3 sub-grids that compose the grid contains all the digits from 1 to 9.
- In 1984 Nikoll, Japan’s leading puzzle creating company, took the Number Place puzzle, made a few logistical improvements and named the puzzle Sudoku. Su means a number and doku means singular or unique.
- More improvements were made in 1986. The patterns were symmetrical and the number of given clues were reduced.

KenKen:
- KenKen (cleverness) is a style of arithmetic and logic puzzle invented in 2004 by the Japanese math teacher Tetsuya Miyamoto.
- Objective is to fill the grid in with the digits 1 – 6 such that:
  - Each row contains exactly one of each digit
  - Each column contains exactly one of each digit
  - Each bold-outlined group of cells is a cage containing digits which achieve a specified result using the specified mathematical operation: addition, subtraction, multiplication, and division.
  - Numbers may be repeated within a cage, as long as they are not in the same row or column.

FUN FACTS
• There are 6,670,903,752,021,072,936,960 possible combinations for completing a 9-by-9 Sudoku grid.

• British Airways forbids its flight attendants from puzzling over Sudoku during takeoff and landing.
  (Source: The New York Times, 05/06/06)

• Sudoku puzzles are used to slow the progress of Alzheimer’s disease.

• According to Islamic Medical Manuscripts magic squares were used as charms for easing childbirth.

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