Forum: Riddles ï¼ˆè¬Žèªžï¼‰
Topic: MATRIX ARITHMETIC III
Subject: Re: MATRIX ARITHMETIC III
Posted by: Anonymous
Posted on: 2007/8/27 10:20:55

Hello Lady

There are many ways to construct magic squares, but the standard and most simple way is to follow certain configurations which generate regular patterns. Magic squares exist for all values of n, with only one exception - it is impossible to construct a magic square of order 2, i.e 4 squares. Magic squares can be classified into three types: odd, doubly even (n divisible by four) and singly even (n even, but not divisible by four). Odd and doubly even magic squares are easy to generate; the construction of singly even magic squares is more difficult but several methods exist. My impending 64-square is one such example.

The universal method of constructing an odd order magical square is to start from the central column of the first row with the number 1, the fundamental movement for filling the squares is diagonally up and right, one step at a time. If a filled square is encountered, one moves vertically down one square instead, then continuing as before. When a move would leave the square, it is wrapped around to the last row or first column, respectively.
Similar patterns can also be obtained by starting from other squares.

Another method of construction of an odd order magical square is to use the downward diagonal slide, which I have designed myself. It is complicated and more time consuming, yet difficult to explain. Spare me!

For even order magical square, go left to right through the square filling counting and filling in on the diagonals only. Then continue by going left to right from the top left of the table and fill in counting down from 16 or n^2 as shown below.

```
01 -- -- 04
-- 06 07 --
-- 10 11 --
13 -- -- 16
```

```
01 15 14 04
12 06 07 09
08 10 11 05
13 03 02 16
```

May I refer you to the term "magical square" found in the CENTURY global-language dictionary, Volume Five, Page 16. There you will find a solution to magical square order 4 employing the universal method; almost similar to your solution except that you used the downward method instead of the horizontal method. Which is why I guess you are left-handed, as a left handed person (I think) finds it more versatile to write downwards than horizontally.

I hope I have made myself understood. And after having said all these, I wonder if I should continue with Matrix Arithmetic anymore!

Below is a link for better understanding on how magical squares are being constructed.

Looks like it's 'sayonara' to Magical Square from here!

Cheers all!

http://mathworld.wolfram.com/MagicSquare.html