MOST-PERFECT WORD MAGIC

OSCAR THUMPBINDLE
Timberland Cusp, Ohio

Here is a rather hard puzzle. Assign the sixteen numbers 0 through 15 to the letters of OSCAR THUMPBINDLE so that the eight words BASH, BUMP, CLAD, CURE, HORN, MIND, PLOT, and SITE each sum to 30. There are 86 ways four of the sixteen numbers can sum to 30 and therein lies the puzzle’s difficulty. However, we can make the puzzle almost trivial if we supply a diagram of a magic octagon as a guide. Notice that all of the figure’s black nodes add up to 30 when one sums the numbered lines leading into each of them.

Using this octagon (adapted from “Supermagic and Antimagic Graphs”, N. Hartsfield and G. Ringle, J. Rec. Math Vol. 21(2), 1989), the reader should be easily able to solve the puzzle. One of many possible answers appears in Answers and Solutions.
There are very many other graphs in addition to the octagon that could be made into word magic puzzles, but in this article we will continue with the oldest form: Magic Squares.

Here is an example:

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M R S
E A U
T O P
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Notice that every across and down triple in the crossword is a bonafide word (RAO is a town in Senegal). Moreover, the two main diagonals MAP and SAT are words. But even more; all the broken diagonals are words: EOS, RUT, REP, and MOU (Memorandum Of Understanding, DeSolas’ Abbreviations Dictionary).

This becomes a word magic square of pandiagonal type. The famous Lo Shu 3x3 magic number square cannot be made pandiagonal. There are only eight ways three numbers from the set 0,1,2,3,4,5,6,7,8 can sum to the magic constant 12, so the most we can expect in the Lo Shu is that the three rows, three columns and two main diagonals sum to the magic constant. Using the following subset of OSCAR THUMPBINDLE and assigning numbers accordingly, will turn our word puzzle into the Lo Shu. (We prefer to use 0-8 rather than 1-9 for several reasons).

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M 0 U S E T R A P
5 8 2 7 6 1 0 4 3
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Another famous magic square is the one appearing in Albrecht Dürer’s etching “Melencolia I”. It is reproduced below with the letters OSCAR THUMPBINDLE superimposed.

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16 O 3 L 2 B 13 D
5 M 10 P 11 U 8 H
9 T 6 C 7 S 12 I
4 R 15 A 14 N 1 E
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The magic constant is 34 and with the number assignments, many four letter words which sum to this constant can be found in the square. All are entries in NI2.

Rows and columns: BOLD, HUMP, TICS, NEAR, MORT, CLAP, SNUB, and HIDE
Main Diagonals: POSE, CURD
Two half-Diagonals: BATH, LIMN
Others: MI, T, C, RODE

Since not all half-diagonals are included, this is not a pandiagonal square.

A milestone was reached in 1998 upon publication of the book *Most-Perfect Pandiagonal Magic Squares* by Kathleen Ollerenshaw and David Brée (The Inst. Of Math. And Its Applications). For the first time in the centuries old history of magic squares, this book gives a method of construction and enumeration of all pandiagonal magic squares called most-perfect. Most-perfect squares are pandiagonal and the integers in any 2x2 block of four add to the same sum and complementary pairs along the diagonals do also. This remarkable book was published when Dame Ollerenshaw (b. Oct. 1, 1912) was in her mid-eighties (and you thought mathematics was a young man’s game!).

What follows is an assignment of the numbers 0-15 to the letters of OSCAR THUMPBINDLE so that the number square is most-perfect, with constant 30, and the word’s formed that sum to 30 are all in NI2 except for the five abbreviations which may be found in DeSola’s Abbreviation Dictionary.

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We can add as words the four knight tours MORT, BALE, RIND and CUSP. These four do not sum to 30 however (similar to the case in the 3x3 puzzle).

Our most-perfect square is the same square as in the Word Ways article “Games on Word Configurations”, Nov. 1994. The only change is in the swap of letters H and R.

We invite the reader to extend these results.

MARY'S LAMB

WIN EMMONS
Waco, Texas

On a silver platter
Poor Mary had gotten her little lamb
A diamond studded collar when she ordered
The jewels, alas, someone saw
Her cook the books. Then
Soon to the restaurant she had to sell
The lamb she loved so much....
At the restaurant:
The lamb, she loved. So much.
Soon to the restaurant she had to sell
Her cook, the books, then
The jewels. Alas, someone saw
A diamond studded collar when she ordered.
Poor Mary had gotten her little lamb
On a silver platter.