

Franklin magic square*

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One day in 1771, Benjamin Franklin, tired of hearing political debates, amused himself by creating the following magic square, now called a *Franklin magic square*:

$$\begin{bmatrix} 52 & 61 & 4 & 13 & 20 & 29 & 36 & 45 \\ 14 & 3 & 62 & 51 & 46 & 35 & 30 & 19 \\ 53 & 60 & 5 & 12 & 21 & 28 & 37 & 44 \\ 11 & 6 & 59 & 54 & 43 & 38 & 27 & 22 \\ 55 & 58 & 7 & 10 & 23 & 26 & 39 & 42 \\ 9 & 8 & 57 & 56 & 41 & 40 & 25 & 24 \\ 50 & 63 & 2 & 15 & 18 & 31 & 34 & 47 \\ 16 & 1 & 64 & 49 & 48 & 33 & 32 & 17 \end{bmatrix}$$

The magic constant is 260. Furthermore, half any row or column (positions 1 to 4 or 5 to 8) equals half the magic constant. Two centuries later, Joseph Madachy realized that some half diagonals from the corner to the center also give 260.

Some other 8 by 8 magic squares with these properties are also called Franklin magic squares.

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