

1154-M5-1764 **Hossein Behforooz*** (hbehforooz@utica.), Utica, NY 13501. *New Developments on the Benjamin Franklin Magic Squares.*

Yes it is puzzle and magic time. When I ask my students about the next number after 1, 2, 4, 8, 16, all of them yell and say 32. But when I give them a little hint and ask them to think about the next number after 1, 2, 4, 8, 16, 23, then dead silence is there. We have faced with this situation when we wanted to extend the orders of Benjamin Franklin Magic Squares after 4, 8 and 16. I have fixed 32 by 32 Franklin magic square and I expected the next one will be of order 64 by 64 but it became totally different. In this presentation I will mention some of the recent studies and developments on Franklin magic squares from original orders 4, 8, 16, to 32, 49 and 64. Then I will present many interesting properties of the Franklin magic squares that we can see them in higher orders but not in orders 4 or 8. General audience and undergraduate students can easily follow my talk. Come and join us and have fun. Math is FUN. References [1] Hossein Behforooz. 32 by 32 Behforooz-Franklin Magic Square, Journal of Recreational Mathematics, Vol. 33, No 4, 2005. [2] Seymour S. Block and Santiago A. Tavares: Before Sudoku, the World of Magic Squares, Oxford University Press, UK, 2009. [3] Ronald P. Nordgren: How Franklin Made His Squares, Mathematics Magazine, Vol. 91, No 1, 2018. (Received September 16, 2019)