The Invariant of Abiyev's Balanced Squares and Balanced Cubes of Odd Order

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Abstract **-** For the first time, a universal algorithm for writing magic squares has been found by Abiyev. This algorithm allows to write not only magic squares, but also magic cubes of any order, from any numbers. These squares and cubes have been called the Balanced Squares and Cubes, respectively. The algorithm is unique, extremely simple and easily programmable, and may be applied to numerous fields, such as, mathematics, computer science, cryptology, genetics, science, engineering, music, city planning, etc. In Balanced Squares of odd order, the numbers have been replaced with electric charges and the moment of electric charges has been calculated in each frame of such system. These calculations produce a table that is constant only for Abiyev's Balanced Squares of odd order and the 3 orthogonal squares passing the centers of Balanced Cubes of Odd Order. The numbers of this table stay constant when writing these squares from any numbers, even symbols. Hence, this table is called the Invariant of Abiyev Squares. The sequences 2, 6, 14, 26, 44, 68, 100, 140, 190 and 2, 12, 38, 88, 170 and arithmetic progressions with constants 2, 8, 18, 32, 50 and 2, 6, 10 ,14, 18, 22 have emerged in this table. The observed sequences and progressions have been found to correlate with the periodic law. This correlation shows that the periodic law is expected to end with the 218th element. Thus, 2 more repeated periods, which include the aforementioned sequences and progressions, have been added to the periodic law. Following this, focusing on finding superheavy elements by physicists is therefore encouraged.

Keywords **-** magic square, algorithm, periodic law, correlation, sequence, superheavy.