

Finding the Lattice Points: One Gauss Circle at a Time

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**Abstract:**

Lattice points are enclosed inside Gauss circles which contain square patterns and in some cases perfect squares are formed. In a circle with the radius of two and three, perfect squares are formed. Inside those circles we can find a total of forty nine and eighty one lattice points. Could there possibly be a connection between perfect square number and the lattice points inside the Gauss circles? Included in this paper are some of the discoveries and advances in research I have found about the lattice point connections to the complete and perfect squares. Throughout this paper I will look further in depth into the correlation of lattice points and try to expand upon the knowledge in connection to the circle. I plan to find the connection between perfect square numbers and if they form complete squares within the circle.