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SPIRAL DISPOSITIONS OF NONNEGATIVE INTEGERS AT LATTICE POINTS

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We consider four natural dispositions of nonnegative integers at the points of the Gaussian (square) and Eisenstein (hexagonal) lattices, of the nonnegative quadrant of the Gaussian lattice on the complex plane, and of the cubic lattice in the three-dimensional Euclidean space. All four dispositions give some representations of the set of naturals in the form of a finite set of polynomials in the position coordinates of a natural number. We prove that, for the first three dispositions, all primes are "visible" from the origin.

Key words and phrases: prime, Gaussian lattice, Eisenstein lattice, cubic lattice.

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