

Pythagorean-Platonic Lattice Method for Finding all Co-Prime Right Angle Triangles

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Abstract : This paper presents a method for determining all of the co-prime right angle triangles in the Euclidean field by looking at the intersection of the Pythagorean and Platonic right angle triangles and the corresponding lattice that this produces. The co-prime properties of each lattice point representing a unique right angle triangle are then considered. This paper proposes a conjunction between these two ancient disparaging theorists. This work has wide applications in information security where cryptography involves improved ways of finding tuples of prime numbers for secure communication systems. In particular, this paper has direct impact in enhancing the encryption and decryption algorithms in cryptography.

Keywords : Pythagorean triples, platonic triples, right angle triangles, co-prime numbers, cryptography

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