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"Sophie Germain"

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CIS-487023

Genzlinger, Karenna ; Lockridge, Keir Sophie Germain primes and involutions of $\mathbb{Z}_n^\times$. Involve. A Journal of Mathematics 8 (2015) , no. 4 , 653 —663 .

Article

In the paper “What is special about the divisors of 24?”, Sunil Chebolu proved an interesting result about the multiplication tables of [math] from several different number theoretic points of view: all of the 1s in the multiplication table for [math] are located on the main diagonal if and only if [math] is a divisor of 24. Put another way, this theorem characterizes the positive integers [math] with the property that the proportion of 1s on the diagonal is precisely 1. The present work is concerned with finding the positive integers [math] for which there is a given fixed proportion of 1s on the diagonal. For example, when [math] is prime, we prove that there exists a positive integer [math] such that [math] of the 1s lie on the diagonal of the multiplication table for [math] if and only if [math] is a Sophie Germain prime.

CIS-350294

Ford, David ; Jha, Vijay On Wendt's determinant and Sophie Germain's theorem. Experimental Mathematics 1993 (1993) .

Article

After a brief review of partial results regarding Casel 1 of Fermat's Last Theorem, we discuss the relationship between the number of points on Fermat's curve modulo a prime and the resultant R_n of the polynomials $X^n - 1$ and $(-1 - X)^n - 1$, called Wendt's determinant. The investigation of a conjecture about essential prime factors of R_n (Conjecture 1.3) leads to a proof that Case 1 of Fermat's Last Theorem holds for any prime exponent $p > 2$ such that $np + 1$ is prime for some integer $n \leq 500$ not divisible by 3.

EDITOR'S NOTE: In addition to providing insight into Wendt's determinant, an object of interest in its own right, this paper belongs to a continuing line of investigations that may prove fruitful in spite of the recent announcement by Wiles of his proof of Fermat's Last Theorem. It is not unreasonable to hope for a more elementary proof than Wiles'.

CIS-255354

Tang, Hui-Chin ; Hsieh, Kuang-Hang ; Chang, Hwapeng A 32-bit linear congruential random number generator with prime modulus. Journal of Discrete Mathematical Sciences and Cryptography 13 (2010) , no. 5 , 479 —486 .

Keywords: Linear congruential generator | Mersenne prime | Sophie-Germain prime | Spectral test | full period

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