

ON SOME DIVISIBILITY PROPERTIES OF FIBONACCI AND RELATED NUMBERS

6. V. E. Hoggatt, Jr. *Fibonacci and Lucas Numbers*. Boston: Houghton Mifflin, 1969; Santa Clara, Calif.: The Fibonacci Association, 1980.
7. G. Kern-Isberner & G. Rosenberger. "Über Diskretheitsbedingungen und die diophantische Gleichung $ax^2 + by^2 + cz^2 = dxyz$." *Archiv der Math.* 34 (1980):481-93.
8. G. Rosenberger. "Über Tschebyscheff-Polynome, Nicht-Kongruenzuntergruppen der Modulgruppe und Fibonacci-Zahlen." *Math. Ann.* 246 (1980):193-203.
9. L. Somer. "The Divisibility Properties of Primary Lucas Recurrences with Respect to Primes." *The Fibonacci Quarterly* 18, No. 4 (1980):316-34.

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LETTER TO THE EDITOR

JOHN BRILLHART

July 14, 1983

In the February 1983 issue of this Journal, D. H. and Emma Lehmer introduced a set of polynomials and, among other things, derived a partial formula for the discriminant of those polynomials (Vol. 21, no. 1, p. 64). I am writing to send you the complete formula; namely,

$$D(P_n(x)) = 5^{n-1} n^{2n-4} F_n^{2n-4},$$

where F_n is the n th Fibonacci number. This formula was derived using the Lehmers' relationship

$$(x^2 - x - 1)P_n(x) = x^{2n} - L_n x^n + (-1)^n,$$

where L_n is the Lucas number. Central to this standard derivation is the nice formula by Phyllis Lefton published in the December 1982 issue of this Journal (Vol. 20, no. 4, pp. 363-65) for the discriminant of a trinomial.

The entries in the Lehmers' paper for $D(P_4(x))$ and $D(P_6(x))$ should be corrected to read

$$2^8 \cdot 3^4 \cdot 5^3 \quad \text{and} \quad 2^{32} \cdot 3^8 \cdot 5^5,$$

respectively.

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