

By taking different values for r_1 and r_2 , we can obtain several configurations which yield products of binomial coefficients which are squares. In fact, one can build up a long serpentine configuration, or snowflake curves, as noted by Hoggatt and Hansel.

Note that the theorem holds for generalized binomial coefficients (and hence for q -binomials), and in particular for the Fibonomial coefficients.

REFERENCES

1. A. K. Gupta, "On a 'Square' Functional Equation," unpublished.
2. V. E. Hoggatt, Jr., and Walter Hansel, "The Hidden Hexagon Squares," Fibonacci Quarterly, Vol. 9, No. 2 (April, 1971), pp. 120 and 133.
3. R. G. Stanton and D. D. Cowan, "Note on a 'Square' Functional Equation," Siam Review, Vol. 12 (1970), pp. 277-279.



LETTER TO THE EDITOR

Dear Editor:

Here are two related problems for the Fibonacci Quarterly, based on some remarkable things discovered last week by Ellen Crawford (a student of mine).

Problem 1. Prove that if m and n are any positive integers, there exists a solution x to the congruence

$$F_x \equiv m \pmod{3^n}.$$

Solution. Let m be fixed: we shall show that it is possible to solve the simultaneous congruences

$$(*) \quad \begin{aligned} F_x &\equiv m \pmod{3^n} \\ F_x + F_{x+1} &\not\equiv 0 \pmod{3}. \end{aligned}$$

This is clearly true for $n = 1$. It is also easy to prove by induction, using

$$F_{m+n} = F_{m-1} F_n + F_m F_{n+1},$$

(Continued on page 79.)