Hence,

$$g_m(x) = \frac{(1-x)\sum_{k=1}^{m-1}\sum_{n=1}^{k-1}(-1)^{k+1}\binom{m-1}{k}R_{m,-n}x^{k-n-1} + u_2^{m-1}}{(1-x)^m}, \quad m \geq 2 . \tag{4.4}$$

For special sequences

$$\{u_n\}_{n=1}^{\infty}$$

with $u_1 = 1$, the polynomial in the numerator of $g_m(x)$, $m \geq 1$, is predictable from the convolution array of the sequence. This matter will be covered by the authors in another paper which will appear in the very near future.

REFERENCES

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3. Charles Jordan, *Calculus of Finite Differences,* Chelsea Publishing Co., 1947, pp. 131–132.
4. John Riordan, *Combinatorial Identities,* John Wiley and Sons, Inc., 1968, pp. 188–191.

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LETTER TO THE EDITOR

February 20, 1975

Dear Mr. Hoggatt:

I'm afraid there was an error in the February issue of *The Fibonacci Quarterly.* Mr. Shallit's proof that phi is irrational is correct up to the point where he claims that $1/\phi$ can't be an integer. He has no basis for making that claim, as ϕ was defined as a rational number, not an integer.

The proof can, however, be salvaged after the point where p is shown to equal 1. Going back to the equation $p^2 - pq = q^2$, we can add pq to each side, and factor out a q from the right: $p^2 = q(q+p)$. Using analysis similar to Mr. Shallit's, we find that q must also equal 1. Therefore, $\phi = p/q = 1/1 = 1$. However, $\phi^2 - \phi - 1 = -1 \neq 0$; thus, our assumption was false, and ϕ is irrational.

Sincerely,
s/David Ross, Student,
Swarthmore College

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