

in the  $k^0$  vertical column. Complex expressions involving various powers of  $k$  can be very much simplified by reference to these tables.

## REFERENCE

Robert S. Beard, "The Golden Section and Fibonacci Numbers",  
Scripta Mathematica, Vol. 16, Mar. - June, 1950 pp. 116-119.

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*(Tables and Chart are on pages 165, 166 and 167.)*

(Continued from page 152.)

In general we may transform equation (1) by writing

$$(3) \quad u_k = F(V_k) \quad .$$

Suppose that furthermore we require that  $F$  satisfy the functional equation

$$(4) \quad F^2(s) - bF(s) + b = F(2s) \quad .$$

Then our equation becomes  $F(V_{k+1}) = F(2V_k)$ , a solution of which is given by  $V_k = A2^k$ . Hence we have

$$(5) \quad u_k = F(A2^k) \quad .$$

We now consider the functional equation (4). Let

$$F(s) - \frac{b}{2} = 2L(s) \quad .$$

Then equation (4) becomes

$$(6) \quad L^2(s) = \frac{1}{2} \left[ \left( \frac{b^2}{8} - \frac{b}{4} \right) + L(2s) \right] \quad .$$

(Continued on page 169.)