In a forthcoming paper on the topic (viz. [4]), an alternative (and more rigorous) approach is presented for the general solution of the problem proposed in this paper, under appropriate restrictions of analyticity for functions f and g.

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[Continued from p. 268.]

$$T_{i-3} = \sum_{m=0}^{\left[\frac{i-3}{2}\right]} \sum_{r=0}^{\left[\frac{i-3}{2}\right]} \binom{i-m-2r-3}{m+r}\binom{m+r}{r} = \sum_{m=2}^{\left[\frac{i+1}{2}\right]} \sum_{r=1}^{\left[\frac{i-1}{3}\right]} \binom{i-m-2r-1}{m+r-1}\binom{m+r-1}{r-1} .$$

Now,

$$T_i = T_{i-1} + T_{i-2} + T_{i-3} = \sum_{m=0}^{[i/2]} \sum_{r=0}^{[i/3]} \binom{i-m-2r}{m+r}\binom{m+r}{r}$$

(from lemma) which is what we required.

Fairly clearly when we are in the plane $r = 0$, we have the ordinary Fibonacci numbers. Further investigations suggest themselves along the lines of Hoggatt [3] and Horner [4].

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