

How could I possibly dread getting letters from Mizan?

In my usually futile quest for Ramanujanesque (or at least novel) identities, I would twist and stretch my matrix products as hard as I could, striving for a nugget that wasn't in that damn book (BHS). When I finally had something pretty, I emailed it to the math-fun forum, bcc Mizan. In a few days would come a handwritten letter from Canada:

Dear Bill, substituting ..., transforming ..., standing on one leg in a hammock ... (or so it seemed), your identity follows.

In a desperate bid for novelty, I managed to q -extend Ramanujan's rapidly convergent $1/\pi$ series of dyadic rationals.

$$\sum_{k \geq 0} \frac{42k+5}{2^{12k+4}} \binom{2k}{k}^3 = \frac{1}{\pi},$$

getting

Out[555]=

$$\sum_{k=0}^{\infty} \frac{512 q^{6k^2} \left(-\frac{(1-q^{6k+3})q^{6k+1}}{(q^{2k+1}+1)^3} - q^{6k+1} + 1 \right) ((q; q)_{2k})^3}{(1-q^2) ((-1; q)_{k+1})^6 ((-1; q)_{2k+1})^3 ((q; q)_k)^6} = \frac{(q; q^2)_{\infty} (q^3; q^2)_{\infty}}{(q+1) ((q^2; q^2)_{\infty})^2}$$

(where the r.h.s. may be seen as a q -extension of Wallis's π product.)

Surely BHS could never have anticipated this exoticum!

“Dear Bill, your identity is a limiting case of ...”

How does he do that? For the longest time, I thought I was just stupid for not being similarly able to pull rabbits out of the BHS hat. The B stands for Basic, after all.

My rabbit is cooked. How could such a clever and kindly man prove so cruel?

BHS will be ten times less useful to me without Mizan.

--Bill Gosper