1067-11-938 **John R. Greene*** (`jgreene@d.umn.edu`), Department of Mathematics and Statistics, University of Minnesota Duluth, Duluth, MN 55812. *Limiting structure for some central binomial evaluations.*

Series of the form

$$\sum_{n=0}^{\infty} \frac{(n!)^2(4x^2)^n}{(2n)!(2m+2n+1)}$$

and

$$\sum_{n=0}^{\infty} \frac{(n!)^2(-4x^2)^n}{(2n)!(2m+2n+1)}$$

are examined. In each case, there is an evaluation of the form

$$(p_m(x)f(x) - q_m(x))/x^{2m}$$

where $f(x)$ is a transcendental function and $p_m(x)$ and $q_m(x)$ are polynomials with rational coefficients. We prove that for $|x| < 1$,

$$\lim_{m\to\infty} \frac{q_m(x)}{p_m(x)} = f(x).$$

(Received September 16, 2010)