

$$\sum_{n=0}^{\infty} \sum_m N_V(m, n) z^m q^n = \frac{(q)_\infty}{(zq)_\infty (q/z)_\infty}$$

$$= \frac{(1-q)}{(zq)_\infty} \frac{(q^2; q)_\infty}{(q/z)_\infty}$$

$$= \frac{(1-q)}{(zq)_\infty} \sum_{j=0}^{\infty} \frac{(zq)_j (q/z)^j}{(q)_j} \quad \left(\begin{array}{l} z \rightarrow q/z \quad a \rightarrow qz \\ n(*) \end{array} \right)$$

(since $|q| < 1$ & $|q/z| < 1$)

$$= \frac{(1-q)}{(zq)_\infty} \left(1 + \sum_{j=1}^{\infty} \frac{(zq)_j (q/z)^j}{(q)_j} \right)$$

$$= \frac{(1-q)}{(zq)_\infty} \left(1 + \sum_{j=1}^{\infty} \frac{(zq)_j (q/z)^j}{(1-q)(q^2; q)_{j-1}} \right)$$

$$= \frac{(1-q)}{(zq)_\infty} + \sum_{j=1}^{\infty} \frac{q^j z^{-j}}{(q^2; q)_{j-1} (zq^{j+1})_\infty}$$

$$= \frac{(1-q)}{(zq)_\infty} + \sum_{j=1}^{\infty} \frac{z^{-j} q^{1+1+\dots+1}}{(1-q^2)(1-q^3)\dots(1-q^j)(1-zq^{j+1})(1-zq^{j+2})\dots}$$

G.F. for partitions with at least one 1
in which the power of z counts
of parts larger than the number of ones — # of ones