1086-11-2323 **Alexander Berkovich*** (alexb@ufl.edu). *On Certain Partition Inequalitities.*

It is a well known corollary of the celebrated Rogers-Ramanujan identities that the coefficients in q-series expansion of the difference of two infinite products

$$1/(q,q^4;^5)_inf - 1/(q^2,q^3;q^5)_inf$$

are all non-negative.

Surprisingly, it is also true for the finite products

$$1/(q,q^4;^5)_L - 1/(q^2,q^3;q^5)_L,\ L \text{ is integer } > 0.$$

In my talk I will discuss a simple injective argument due to Frank Garvan and myself that proves it.

Next, I review a new theorem by George Andrews: The q-series expansion of

$$1/(q,q^5,q^6;^5)_L - 1/(q^2,q^3,q^7;q^8)_L, L \text{ is integer } > 0$$

has non-negative coefficients.

Finally, I discuss a recent generalzation of this theorem by Keith Grizzell and myself :

For any $L > 0$ and any odd $y > 1$, the q-series expansion of

$$1/(q,q^{y+2},q^{2y};q^{2y+2})_L - 1/(q^2,q^y,q^{2y+1};q^{2y+2})_L$$

has non-negative coefficients. (Received September 25, 2012)