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**Alexander Berkovich\*** (alex@math.ufl.edu), Department of Mathematics, University of Florida, Little Hall Box 118105, Gainesville, FL 32611. *Infinite products with nonnegative integer coefficients.*

Let  $P[q]$  denote the set of all power series in  $q$  with nonnegative integer coefficients. It is easy to see that  $1/E(q)$  is in  $P[q]$ . Here  $E(q) = \prod_{j \geq 1} (1 - q^j)$ . However, it is not immediately obvious that for any natural  $m, n \geq 1$  the infinite product  $\frac{E(q^n)(q^n)E(q^{nm})^{nm-n-m}}{E(q)}$  is in  $P[q]$ . In my talk I will discuss a variety of "non-obvious" infinite products in  $P[q]$ . Often these products have very interesting partition theoretic interpretation. This way, for example, we prove a *mod 5* crank inequality conjectured more than 20 years ago.

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