Andrews, G. E.; **Berkovich, A.**

A trinomial analogue of Bailey's lemma and $N = 2$ superconformal invariance. (English)

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Summary: We propose and prove a trinomial version of the celebrated Bailey's lemma. As an application we obtain new fermionic representations for characters of some unitary as well as nonunitary models of $N = 2$ superconformal field theory (SCFT). We also establish interesting relations between $N = 1$ and $N = 2$ models of SCFT with central charges $\frac{3}{2}\left(1 - \frac{2(2-4\nu)^2}{2(4\nu)}\right)$ and $3\left(1 - \frac{2}{4\nu}\right)$. A number of new mock theta function identities are derived.

MSC:

05A19	Combinatorial identities, bijective combinatorics
81T40	Two-dimensional field theories, conformal field theories, etc. in quantum mechanics
11P82	Analytic theory of partitions
05A30	q-calculus and related topics

Keywords:

Bailey's lemma; superconformal field theory; mock theta function identities

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