

A NOTE ON A BIJECTIVE PROOF OF A THEOREM OF
G. E. ANDREWS

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Abstract: In this paper we provide a bijective proof for the theorem 3.1 of Andrews [6]. This theorem involves the number of semi-Fibonacci partitions and the number of binary partitions in which each part appears an odd number of times.

Keywords and Phrases: Integer Partitions, Semi-Fibonacci, Binary Partitions, Bijective Proof, Partition Identities.

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1. Introduction

In Andrews [6], the author gave analytic proofs for two results involving the semi-Fibonacci partitions and a class of binary partitions. In the final section of [6], the author wrote: "It would be nice to have combinatorial proofs of both theorems." In this sense we deal with a bijective proof for the first theorem of this paper. As shown in [6], we give the mathematical definitions for the mentioned two classes of integer partitions, as follows.

Definition 1.1. Let $\mathcal{SF}(n)$ denote the set of semi-Fibonacci partitions of n .

- if n is even, all parts of a semi-Fibonacci partition is parts of a semi-Fibonacci partition of $n/2$, wherein each part has been multiplied by 2;