

1077-11-454

**Roy O. Quintero\*** (rqinter@ula.ve), Av: Tabiskey Castán, Urb: Mirabel, Quinta Belén María, 9-464, Trujillo, Trujillo 3150, Venezuela. *A Note on the Three-pile problem*. Preliminary report.

The main purpose of this research is to find a general version of the well known card trick called Three-pile problem (TPP). First, the TPP is expressed in terms of a basic discrete function defined on a deck of 27 cards and then generalized appropriately for any deck of  $ab$  cards. Second, all of its fixed points are found and characterized basically in three types. Finally, we employ this information to generate a simple procedure for a bunch of new brand tricks as TPP. Everything is done by using only undergraduate mathematics as basic properties of the quotient and remainder of the division of integers, modular arithmetic, and naive theory of discrete functions. (Received September 02, 2011)