The well-known combinatorial game Nim is played with heaps of stones. Two players take turns removing stones from any heap of their choosing. Subtraction games are a generalization of nim where the number of stones a player may remove from the heap is restricted to be a number coming from a pre-specified set $S \subset \mathbb{N}$. We call $S$ the subtraction set for the game. We retain the normal play convention, where the last player able to move wins the game.

Each subtraction set $S$ corresponds to an infinite sequence, called the Grundy sequence, which gives information about winning strategies in any game on $S$.

It is not hard to show that the Grundy sequence for a subtraction game with a finite subtraction set is ultimately periodic. A more challenging problem is to describe a formula to compute the period of a Grundy sequence given any finite subtraction set $S$. We will present preliminary results on such methods to determine the periods for sequences on three-element subtraction sets. We will also present evidence in support of a conjecture that the period for three element subtraction sets will always be a multiple of the sum or difference of elements in the subtraction set. (Received September 23, 2012)