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*Linear Divisibility Sequences of Order Six*

A sequence of rational integers is said to be a divisibility sequence if the  $m$ th term always divides the  $n$ th term whenever  $m$  divides  $n$ . If the divisibility sequence also satisfies a linear recurrence relation, it is said to be a linear divisibility sequence of order  $k$ , where  $k$  is the degree of its characteristic polynomial. The best-known example of a linear divisibility sequence of order 2 is the Lucas sequence, one particular instance of which is the famous Fibonacci sequence. Indeed, it was through experimenting with the Fibonacci numbers that Lucas discovered the properties of the more general Lucas sequence. It was these properties that he utilized in developing his various primality tests. While much has been learned recently about linear divisibility sequences of order 4 (see Williams and Guy 2011, 2012), there is very little known about linear divisibility sequences of order 6. In the Online Encyclopedia of Integer Sequences, there are only 5 such sequences listed. In this paper we mention these sequences and produce some results concerning their generalizations.