

THE RELATIONSHIP BETWEEN  $N^{\text{th}}$  LUCAS NUMBER AND A  
SEQUENCE DEFINED BY M-SEQUENCES

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**Abstract**

In this work, we consider the sequence whose  $n$ th term is the number of M-sequences of length  $n^{\text{th}}$  [6]. We define the set of integer vectors  $E(n)$  on the sequence. We show that the cardinality of  $E(n)$  is the  $n^{\text{th}}$  Lucas number  $L_n$ . We also give some theorem related to  $L_n$  and  $E(n)$ .

**Keywords:**  $n^{\text{th}}$  Lucas Number, M-Sequences, cardinality

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