1003-11-1521 **Joseph E Purdom*** (`jp9506@ship.edu`), 36 Teaberry Drive, Carlisle, PA 17013. *Applications of Fibonacci Numbers and Other Recurrence Relations.*

The aim of this work is to study the properties and applications of Fibonacci numbers and other recurrence relations. Considering $a_n = \sum_{i=1}^{k} r_i a_{n-i}$ as a kth degree recurrence relation, we can generate an expansion of the Binet formula as an implicit formula for a_n. Then, it is possible to establish criterion for the convergence of $\frac{a_{n+1}}{a_n}$ as n $\rightarrow \infty$. From these ideas, it can be shown that a kth degree recurrence relation can be used to approximate roots of a kth degree polynomial. (Received October 05, 2004)