1023-11-825   **Curtis N. Cooper*** (`cooper@cmsu.edu`), Dept. of Math. & Comp. Sci., University of Central Missouri, Warrensburg, MO 64093. *An Identity for Period k Second Order Linear Recurrence Systems.*

Let a_1, a_2, b_1, and b_2 be real numbers. The period 2 second order linear recurrence system is defined to be the sequence $x_0 = 1$, $x_1 = a_1$, and

$$
\begin{aligned}
x_{2n+2} &= a_2 x_{2n+1} + b_1 x_{2n}, \\
x_{2n+3} &= a_1 x_{2n+2} + b_2 x_{2n+1},
\end{aligned}
$$

for $n \geq 0$. We will show that for $n \geq 4$,

$$
x_n = (a_1 a_2 + b_1 + b_2) x_{n-2} - b_1 b_2 x_{n-4}.
$$

Then we will generalize this result to the period $k \geq 2$ second order linear recurrence system. (Received September 22, 2006)

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