1107-11-503   **K. J. Mourad*** (`kjm57@georgetown.edu`), Dept. of Mathematics, Georgetown University, Washington, DC 20057. *Integrality of Terms in Somos Sequences.*

Let $S(k)$ denote the Somos sequence of order k for $k \geq 4$. Now let $f(n, k)$ denote the n'th element of $S(k)$ for any $n \geq 0$ and $k \geq 4$. It is well known that for $k < 8$ that $f(n, k)$ is an integer for all $n \geq 0$. Examples show that this is no longer true when $k \geq 8$.

However, as far as we know, it has not been proved that there is no lower bound, B, such that $f(n, k)$ is an integer when both n and k are larger than B. In other words that there are infinitely many counterexamples to integrality.

After proving this fact we investigate periodicity properties (mod m) first investigated by Raphael M Robinson for k small which imply integrality for such k and we observe that these properties are no longer true for large k.

Lastly, we observe relationships between rational points on elliptic curves and generalized Somos sequences for small k. This relationship can't hold for arbitrarily large k and n perhaps explaining the phenomena we are studying. (Received January 20, 2015)