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Gabriel Lugo and **Frank J Palladino*** (fpalladino@math.sunysb.edu), 350 Circle Rd., Schomburg B103C, Stony Brook, NY 11794. *Unboundedness for some classes of rational difference equations*. Preliminary report.

We study the rational difference equation

$$x_n = \frac{\alpha + x_{n-1}}{Cx_{n-2} + x_{n-3}}, n \in \mathbb{N}.$$

Particularly, we show that for non-negative α and C , whenever $C\alpha = 0$ and $C + \alpha > 0$, unbounded solutions exist for some choice of non-negative initial conditions. Moreover, we study the rational difference equation

$$x_n = \frac{\alpha + \beta x_{n-1} + x_{n-2}}{x_{n-3}}, n \in \mathbb{N}.$$

Particularly, we show that whenever $0 < \beta < \frac{1}{3}$ and $\alpha \in [0, 1]$, unbounded solutions exist for some choice of non-negative initial conditions. (Received February 27, 2009)