

1042-39-28

M. R. S. Kulenovic* (mkulenovic@mail.uri.edu), Department of Mathematics, University of Rhode Island, Kingston, RI 02881. *Competitive systems of rational difference equations in the plane*. Preliminary report.

We consider some special cases of the rational systems in the plane, that is systems of the form,

$$\left. \begin{aligned} x_{n+1} &= \frac{\alpha_1 + \beta_1 x_n + \gamma_1 y_n}{A_1 + B_1 x_n + C_1 y_n} \\ y_{n+1} &= \frac{\alpha_2 + \beta_2 x_n + \gamma_2 y_n}{A_2 + B_2 x_n + C_2 y_n} \end{aligned} \right\}, \quad n = 0, 1, \dots \quad (1)$$

with nonnegative parameters $\alpha_1, \beta_1, \gamma_1, A_1, B_1, C_1, \alpha_2, \beta_2, \gamma_2, A_2, B_2, C_2$ and with nonnegative initial conditions x_0, y_0 such that the denominators are always positive, which are competitive. We describe the global dynamics of such systems. (Received July 28, 2008)