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World order from chaotic beginnings.

Math. Gaz. 88, No. 511, 39-45 (2004).

This article explains the variety of patterns which arise in sequences of bilinear functions of the form $(p+qx)/(r+sx)$. Some produce a rather chaotic sequence, whilst others are periodic or convergent. The differences can be understood by generalising to the complex plane and then projecting on to the surface of a sphere. To illustrate the ideas, Autograph is used.

Classification: I80 G50

Keywords: bilinear transformations; interative sequences; conformal mappings; projections; complex plane