1042-40-161 Nikolai A Krylov* (nkrylov@siena.edu), Siena College, Department of Mathematics, 515 Loudon Road, Loudonville, NY 12211, and Edwin L Rogers (rogers@siena.edu), Siena College, Department of Mathematics, 515 Loudon Road, Loudonville, NY 12211. Dynamics of simple folds in a plane.

Take a strip of paper whose two long edges are parallel rays and take a transversal line intersecting the edges at points A_1 and B_1 . Consider the angle at vertex B_1 between the transversal (A_1B_1) and the directed edge line, and bisect it by another transversal intersecting the opposite edge ray at point A_2 . Repeat such a bisecting procedure at vertex A_2 to produce the point B_2 . Such iterations generate sequences of points $\{A_n\}$ and $\{B_n\}$ and angles $\alpha_n := \angle A_{n+1}A_nB_n$, and it's trivial to show that $\lim_{n\to\infty} \alpha_n = \pi/3$. We will generalize this procedure and show how one can use an autonomous non-homogeneous linear difference system to obtain the limit of a sequence of angles constructed by iterated transversals between any two curves approaching two asymptotes, which are not necessarily parallel. (Received August 18, 2008)