1011-37-6 **Howard A Masur*** (`masur@math.uic.edu`), Department of Mathematics, University of Illinois at Chicago, Chicago, IL 60174. *Billiards in Polygons: Connections of Geometry and Complex Analysis to Dynamical Systems.*

Billiards in Polygons is an example of a dynamical system. We introduce the kinds of questions asked of any dynamical system. An important special case of billiards is when the vertex angles of the polygon are rational multiples of π. Then a simple construction says that the billiard flow on the polygon is equivalent to a flow by straight lines on a flat surface. This connects the subject to geometry of flat surfaces and Riemann surface theory. We will explain a few of these connections and what they tell us about the billiards. (Received February 07, 2005)