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We have proven that there exists a nontrivial periodic orbit of the Koch snowflake billiard. We provide the construction of this periodic orbit (via a collection of IFS's) and examine periodic orbits of other pre-fractal billiard tables. We provide experimental evidence suggesting the existence of periodic orbits of the standard and fat Sierpinski carpet (the analogue of a fat Cantor set in the plane) and other snowflake billiards, as well as an IFS-based method for approaching a rigorous proof of the existence of periodic orbits of these particular billiard tables. Moreover, a brief discussion of fractal tilings of the plane and their implications for fractal billiards is given. (Received September 12, 2008)