

University of Colorado
Department of Mathematics
Problem of the Month
October

You have a billiard table shaped like a regular hexagon with side length equal to one meter. The six pockets of the table are at the six vertices. You place a cue ball at the center of the table and then strike it with the cue stick. After reflecting off sides of the table at least a million times, the ball falls into a pocket. Show that the distance travelled by the ball is \sqrt{n} meters for some integer n .