Department of Mathematics and Statistics Colloquium

Playing With Pendulums

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Abstract: Most people encounter pendulums through "grandfather" clocks. A circular gold piece oscillates back and forth and time is kept on a beautiful clock. What is the fundamental idea behind the pendulum? How does it keep time so accurately? We present the mathematical reason for this and discuss some of the geometry and calculus ideas behind the scenes in time keeping. We discuss some historical aspects of the curves that help humans to keep time. After this we present some interesting curves generated by different kinds of pendulums. Many of these curves will be drawn over time during the talk. This talk will be mostly a demonstration of the complexity in keeping time. The mathematical derivations presented will only need trigonometry, calculus and a little help from Isaac Newton.

Monday, September 11 at 3:50 in Roop 103

Refreshments at 3:30