1023-Z1-1121 **David Richeson*** (richesod@dickinson.edu), Department of Mathematics and Comp. Science, Dickinson College, Carlisle, PA 17013. *A π-less Buffon's Needle Problem.*

The classical Buffon's needle problem states that if a needle of length L is dropped on a wooden floor with boards of width D, then the probability the needle will cross a seam is $2L/D\pi$. We modify the problem by putting the needle inside a clear ball and dropping the ball on the floor. In this case, the probability that the needle lies above a seam does not contain π, and when $L = D$ the probability is surprisingly simple. The calculation of the probability uses a beautiful theorem of Archimedes' on spherical geometry. (Received September 25, 2006)