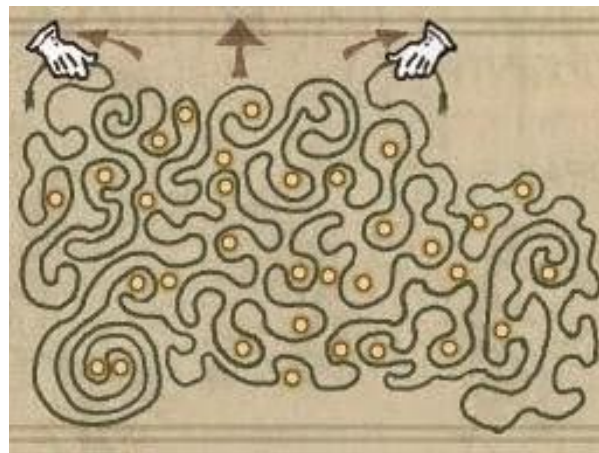


Sixty-Ninth Annual
Vermont High School Prize Examination
Math Day
May 20, 2026



Speaker: Dr. Mike Miller Eismeier, University of Vermont
Title: Inside and Outside, in Practice and Theory

Abstract: Imagine you have a bunch of toy balls scattered around; model this by drawing a bunch of dots on a piece of paper. Pick up your pencil and draw a long rope, twisting and turning but never crossing itself, eventually closing up back where you started. If you pull this rope towards you like a lasso, how can you tell how many balls you'll pull towards you? That is, how many were "inside" your lasso?

You'll learn that there's a quick way to count these at a glance, but that the very concept of "inside" is thorny and not easy to justify, let alone use in practice.