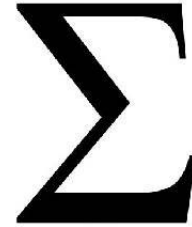


SUM Colloquium

Friday, May 25
5:15PM McHenry 1240



Slugs United
by
Mathematics



Rotating Functions and Logic Theory

Presented by:

Evan Forletta and Shane Kennerly

In high school we all learned how to graph certain functions—parabolas, logarithms, etc. We were taught how to translate and scale these functions, but the one thing no one ever explained was how to *rotate* these functions. Evan’s talk will give a complete and easy answer to this problem and demonstrate it live using the Desmos mathematics software. Topics include matrix transformations and “implicitly” defined plane curves.

Next, Shane will lead us in examining formal logical systems in the context of the foundations of mathematics. Beginning with a brief introduction to first-order logic, we introduce some well known examples of first-order theories (e.g. Peano Arithmetic). We then move on to Model Theory as another manifestation of mathematical logic. We examine Gödel’s completeness and compactness theorems, the Löwenheim–Skolem theorem, and finally the extremely important Gödel incompleteness theorem. To conclude we will explore some of the implications for the study of mathematics in general.

We hope to see you there!