Euler’s Equation, the Completeness Axiom, and Period Three as Models for Ontological Reality: a Philosophy of Mathematics.

Dr. Brad R. Slonaker
Kutztown University of Pennsylvania

Abstract

What is mathematics? What does one do when one does mathematics? After a brief introduction to the utilization of period three and the completeness axiom within philosophical boundaries, these questions will be explored in terms of Euler’s equation: $e^{(i\pi)} + 1 = 0$.

The argument will be made that mathematics is essentially a science of patterns within the ontological realities of shape, change, uncertainty, dimension and quantity. Each of these realities will be paired with the constants contained within Euler’s equation: 1 being the fundamental constant of quantity, 0 the fundamental constant of uncertainty, $\pi$ the fundamental constant of shape, $i$ the fundamental constant of dimension and $e$ the fundamental constant of change. These philosophical underpinnings have guided one person’s conceptions about mathematics.

3:30 p.m.
refreshments served

4:00 p.m.
talk begins