

1139-35-12

**Nathaniel Stambaugh\*** (stambaughn@wit.edu) and **Mark Semon**. *Symmetry and Solutions to the Helmholtz equation inside an equilateral triangle.*

Solutions to the Helmholtz equation within an equilateral triangle which solve either the Dirichlet or Neumann problem are investigated. This is done by introducing a pair of differential operators, derived from symmetry considerations, which demonstrate interesting relationships among these solutions. One of these operators preserves the boundary condition while generating an orthogonal solution and the other leads to a bijection between solutions of the Dirichlet and Neumann problems. (Received November 02, 2017)