Kimberly Elizabeth Stubbs* (kistubbs@ucsc.edu). Geometric Representations of Dedekind’s Proof of Irrationality.

In Essays on the Theory of Numbers, Richard Dedekind gives a general algebraic proof that if D is a positive integer that is not the square of an integer, then $\sqrt{D}$ is irrational. In the 1960’s, Stanley Tennenbaum gives the geometric representation of Dedekind’s proof for which $D = 2$. In this talk we’ll look at the geometric representations of Dedekind’s proof for which $D = 3, 5, 6, 8, 12, 15, 18, 24, 30, 48, 72, 120, 162, 240$ and $288$ and their constructions which are similar to the construction for the $D = 2$ case. (Received December 04, 2018)