The constants $e$, $\pi$, and $i$ appear throughout the secondary school curriculum. At Quinnipiac University we have developed a course for preservice secondary mathematics teachers to study these constants from multiple viewpoints. Students examine the historical and cultural development, geometric and algebraic interpretations, and scientific applications of these constants. This allows them to 1) develop a deeper understanding of the fundamental mathematical concepts of function and transformation, 2) see connections between geometry, algebra, and the calculus, and 3) develop an appreciation for mathematics as an integrated field of study. The presentation will include curriculum resources, sample activities, and examples of student work. (Received September 25, 2006)