

# Abstract

Jacob Juillerat

The numbers  $e$  and  $\pi$  are transcendental numbers, meaning they are not roots of any polynomial with integer coefficients; in other words, they cannot be written as a combination of algebraic numbers. In this talk, we will talk about the mathematics behind the proofs that  $\pi$  and  $e$  are transcendental. We will also talk about some corollaries, such as settling the ancient question of whether one can square a circle. The proof that  $\pi$  is transcendental is a beautiful example of how higher level mathematics can be used to answer ancient questions.