

MATH 330 — Spring 2011
ASSIGNMENT 11

Due April 6, 2011

In Chapters 9, 10, and 11 of *Journey Through Genius* we have seen proofs of three great theorems: Euler's proof that $\sum \frac{1}{k^2} = \frac{\pi^2}{6}$, Euler's proof that $2^{2^5} + 1$ is not prime, and Cantor's proof of the non-denumerability of the continuum.

- 11.1. Outline each of the proofs given in *Journey Through Genius* for these three theorems. These outlines can be in bulleted form or paragraph form, with or without diagrams. Your outlines should capture the fundamental ingredients, ideas, and methods of the proof.
- 11.2 Which of these proofs do you like the most? Which makes the most sense to you? Be detailed in your response.