

MA 330 HOMEWORK
DUE MONDAY, MARCH 30

In Chapter 8 of *Journey Through Genius* and Chapter 3 of *The Calculus Gallery*, we have seen four complete proofs that the harmonic series diverges.

- (1) Outline each of these four proofs. 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.
- (2) Look at your calculus textbook and find the proof contained therein that the harmonic series diverges. Is it one of these proofs? If so, which one?
- (3) Which of these proofs do you like the most? Which makes the most sense to you? Be detailed in your response.

Your response to the first question may be handwritten; the second and third questions should have typed answers.