SCI 199Y: Random Walks and Mathematical Discovery

Discussion questions, week 20.

You have read the (one-page) excerpt from "Innumeracy: Mathematical illiteracy and its consequences", by J.A. Paulos; and the (three-page) excerpt from "Mathematics for the public", by E.J. Barbeau.

Working on your own, spend about 15 minutes considering (and making notes about) the following questions. We will then discuss them as a whole class.

1. What does Paulos mean by 'innumeracy"? What examples of this does he give, and what is their significance?

2. What does Paulos mean by "perverse pride in mathematical ignorance"? What examples of this does he give, and what is their significance?

3. In Paulos's example about the TV weathercaster, what was the *true* probability of rain that weekend? Are any assumptions required to reach this conclusion?

4. What point does Barbeau make about Steve Becker's comment about bridge?

5. What does Barbeau call the "good news ... about mathematics"? Does this remind you of any previous class readings?

6. What does Barbeau blame on the "mathematical educational establishment"? Do you agree with him? What can/should be done about this problem?

7. Both of these excerpts could go under the general heading of "public attitudes towards mathematics". Why are these attitudes important? (List as many reasons as you can.)

Reading assignment for next week:

Read the excerpt of an interview with Donald Knuth, taken from the book *Mathematical People*. Note that, in addition to many other achievements in mathematics and computer science, Prof. Knuth created the mathematical typesetting system TEX, which I use to prepare all of the SCI 199Y handouts! Also, web-minded students might be interested in checking out Prof. Knuth's web page, at

http://www–cs–faculty.Stanford.EDU/∼knuth/