

SCI 199Y: Random Walks and Mathematical Discovery

Discussion questions, week 21.

You have read the excerpt of an interview with Donald Knuth, taken from the book *Mathematical People*.

Working in a group of 3 to 5 students, consider the following questions. We will then discuss them as a whole class.

1. What teachers does Knuth cite as having had special influence on him? (List as many as you can.) What influences did they have?
2. According to Knuth, why did he decide to major in physics instead of music?
3. What are the implications of questions (1) and (2) to the debate on genetic versus environmental influences?
4. In what ways have computers (and computer science) influenced Knuth's development as a mathematician? Do you think Knuth would still have been a mathematician if he had lived in an age before computers?
5. What opinions does Knuth express regarding the teaching of mathematics? Relate these opinions to previous class readings if possible.
6. Besides computers, what other subjects has Knuth related to mathematics? [Hint: Don't forget the arts!]
7. In what ways (if any) has this excerpt changed your view of mathematics and mathematicians?

Reading assignment for next week: Read the excerpts about mathematical understanding and research from "I want to be a mathematician", by P.R. Halmos.