

SCI 199Y: Random Walks and Mathematical Discovery

Discussion question, week 3.

You will be put into a group of about 4 students. As a group, discuss the following question.

Question: You have been assigned to teach a two-hour adult-education class on one of the topics below. Your students are intelligent adults who have never gone to school, and have learned no mathematics beyond the very basics (e.g. adding, subtracting, and multiplying integers). Choose ONE of the topics below. How would you organize the class, to maximize the students' **understanding** of this topic? (Provide as much detail as possible, including reasons for your decisions.)

If you are using cooperative learning in your proposed class, then be sure to relate your design to the Johnson & Johnson readings.

If you are not using cooperative learning, then be sure to justify why you feel your proposed method is better.

Be prepared to present your proposal to the rest of us.

Choose ONE of the following topics for your proposed class:

- adding fractions, e.g. $\frac{1}{2} + \frac{4}{5} = \frac{13}{10} = 1\frac{3}{10}$;
- the “choose formula”, $\binom{n}{k} = \frac{n!}{k!(n-k)!}$;
- elementary probabilities, e.g. when rolling two dice;
- or any other similar-level topic of interest.

Assignment for next week:

Read the four-page excerpt from the NCTM “Standards”; the two-page excerpt from “Calculus” by D. Hughes-Hallett et al.; and the brief statements about mathematics by T.M. Rassias, G. Polya, and I. Stewart. What overall point(s) are these excerpts trying to make? Which aspect(s) do they have in common?