

Contributed Paper Session

2:40 – 2:55 The Name Game: Exploring Random Permutations

Debra Borkovitz, Wheelock College

The Name Game is an engaging activity for students with any mathematical background; it works as a mathematical icebreaker, as an open-ended activity for problem solving and posing, or as a way to explore a variety of topics in combinatorics, probability, and statistics. The activity is an introduction to random permutations, and the talk will explore some of the underlying mathematics, in the context of making it more accessible to various audiences; methods include using physical and computer simulations, exploring small cases, finding recursions, and using spreadsheets.

2:55 – 3:10 Distinguishing between precision and accuracy: Case studies in examples of Carbon-14 dating presented in precalculus and calculus textbooks

Many precalculus and calculus textbooks utilize Carbon-14 dating of organic materials as a classic example of the application of models of exponential growth and decay. Many authors use the known half-life of C-14 to determine the “rate constant” and then use this constant to determine the age of a sample in which the amount of radioactive carbon has decayed to a specified percentage of its original level. Since the exact value of the rate constant is an irrational number, a decimal approximation is generally used to calculate the age of the object, usually to the nearest year. In preparing for a lecture, I was surprised to discover that the ages of objects in the example problems and the ages of objects in the answers to problems in the back of the book were very frequently in error, sometimes by a few years, sometimes by decades, occasionally even more. I started checking other textbooks and found such anomalies were not at all uncommon. This talk will demonstrate both the perils of these types of calculations and how they can be foreseen and avoided.

3:10 – 3:25 A Report from the Trenches: Using Online Quizzes

Jeff Suzuki, Bard College

Recently many web based learning tools have become available for teachers: WebCT, Blackboard, CourseInfo, and others. Some are free, others require a license, but there is no doubt that they will become an integral part of the educational experience. I have been working with these electronic resources for several years, and have come to appreciate their potential and limitations. The following "report from the trenches" is my experience on what works, what doesn't, and how to keep yourself sane and happy while preparing web resources for your students. I will focus on the use of "online quizzes" and how they can be used to enhance proficiency in mathematics.

**3:25 – 3:40 :□The Student-Created Web Page As A Component In A Word Problem
Analysis Assignment**

Sarah L. Mabrouk, Framingham State College

I have used student-created web pages in a variety of General Mathematics, College Algebra, Calculus I, and Calculus III assignments and projects.□In this presentation, I will discuss a word problem analysis assignment for which students were required to present their analysis of and solutions for word problems on web pages.□ will present some of these student-created web pages as well as discuss student reaction to the assignment.