I. Overview

A. What is quantitative reasoning?
   1. Definition of mathematics (ask participants)
   2. Definition of mathematics as
      a. “That which is necessary” (Charles Sanders Pierce)
      b. Quantitative reasoning
         i. Pythagorean theorem example (no numbers)
         ii. Numeracy/innumeracy (quarter pounder example)

B. Why quantitative reasoning?
   (Jeff)

II. The Outcomes

A. Interpret quantitative information such as using graphs

B. Perform basic calculations in the context of the subject matter

C. Apply number sense to evaluate conclusions
   1. How many babies are born per minute in the United States?
   2. How many people in the world use the Internet?
      (2,295,882,327)
      a. How can we put this number in context?
   3. 100 years ago, what percentage of homes had a telephone? (8%)
What was the mean hourly wage? (22 cents)

4. NYT article states that New Yorkers spend $23 billion per year on counterfeit goods.
   a. Population of New York city – 8.5 million
   b. How much would each New Yorker have to spend? ($2700)
   c. Is this reasonable?

III. Examples for English
   A. Zipf’s Law
      1. The second most common word in English is used half as often as the first; the third most common is used 1/3 as often, etc.
      2. Why is this?
      3. Implications for our understanding of language.

IV. Examples for Political Science
   A. Mean response rate for surveys is now 22%; it was 36% in 2000. Why?
   B. Value of a Statistical Life: 6.9 million dollars. What does this mean?

V. Examples for History
   A. Madison’s authorship of the Federalist Papers

VI. What are you already doing?
   A. Grades and weighted assignments
      1. Sample problem