

Math140: Statistics

Outside Assignment 2: How Big Are Numbers

Most people are comfortable when working with small numbers but lose all perspective when numbers become large. When the conversation turns to the federal budget, their eyes gloss over. Just how big is a trillion dollars anyway?

In this assignment we will work through a couple of examples from two British writers, Blastland and Dilnot. Their advice is to make numbers personal, i.e., to recast numbers in a form that makes sense on a familiar level. Here are a couple of examples from their book, *The Tiger that Isn't*. I'll outline the steps but won't do the math. You should follow along actually doing the math. Turn in your work for each example being sure to carefully label each answer.

1. Blastland and Dilnot cite a 1997 Labour proposal to spend £300,000,000 (roughly \$525,000,000) over five years to create a million new childcare places. Is this an exorbitant number?

To answer that question, you need to determine the cost of day care on a personal or individual level. a) First calculate the cost not for a million children but on a per child basis. b) Next, calculate the cost not for five years but for one year and then for one week. c) Now reach a conclusion.

2. In 2006 Britain's National Health Service had a projected budget deficit of around £1 billion. This was condemned as a sign of mismanagement. Was it?

You'll need to know some more information to answer this. First, the NHS annual budget is around £80 billion and the population of Britain is 60 million. a) What percentage of NHS's total budget was £1 billion? b) How does this compare to the Treasury's average error (2%) in budget forecasting? c) How much does NHS spend per person on average? d) How large was the deficit per person? e) What do you conclude?

3. You should have the idea now. Here is another problem to practice on.

Several economists have estimated the cost of the Iraqi war will be on the order of \$3 trillion. (There are plenty of both higher and lower estimates. For a discussion, see <http://www.nytimes.com/2008/03/19/washington/19cost.html?fta=y>.) The population of the US is about 300 million while the population of Iraq is about 30 million. Is \$3 trillion a big number? Explain your answer.