

A Note on Decimal Places
wayne.smith@csun.edu
[updated: Tuesday, August 26, 2008]

Course: BUS 302
Title: *The Gateway Experience* (3 units)

“It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience.”

---*Albert Einstein (1879-1955)*

Introduction

One subtle, yet thorny aspect that concerns writing about numbers is how many decimal places to display in a formal written or presented case (by decimal places, we mean decimal places to the right of the decimal place). The short answer is “just as many as necessary to answer the question at hand.” The long answer, or rather, set of answers, is arguably more complex.

Rule of Thumb For BUS 302 Cases

In BUS 302, nearly all of the cases come with one or more datasets in MS-Excel. Further, the data is usually, but not always, formatted to display a specific number of decimal places. So a good rule of thumb is to format the numbers in the case report or presentation with the same number of decimal places in the original dataset.

Numerical Precision

Many cases use linear regression. MS-Excel will provide several decimal places for each of the numerical quantities in the output section of a linear regression. I have never once used all of the decimal places in any academic or professional report—I suspect you won’t need all of that numerical precision for BUS 302 either. Four or five decimal places is probably as many as you will need and this is probably only for R^2 and p -values. For p -values, never present more than four decimal places in the final report or presentation. There is another advantage to formatting the linear regression output with a smaller number of decimal places—you get to see more of the linear regression output on the display screen or on the printed paper without having to scroll (on the screen) or increase the margins (on the paper).

Dollars and Cents

Some cases are principally accounting cases, particularly financial accounting cases. In almost all situations, *pro-forma* accounting statements will either round to a dollar (that

is, no decimal places) or display only one-hundredths of a dollar (that is, two decimal places). However, some intermediate calculations, particularly calculations involving units or volume, may use more decimal places. Often, intermediate calculations involving units or volume use twice the number of decimal places as will appear in the final report or presentation. In BUS 302, leaving intermediate (but not destined for a report or presentation) at the full precision (that is, without rounding) is the default and is perfectly acceptable.

Formatting

Always “line up” your numbers in a table. Sometimes, this means adding a couple of decimal places to one number to match the number of decimal places in another number. That is, make a shorter number slightly longer by adding one or more ending zeros; don’t make the longer number shorter by truncating or rounding (because we don’t want to lose any significant precision in the already-long number). If you absolutely, positively want to have numbers in a single column in a table have different decimal places, try to place a blank line (row) between the two rows of numbers so that a reader does not get confused.