Typesetting Documents

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Introduction

As I mentioned in a previous lecture, R offers many advantages in document preparation, especially when teamed with the document generation system known as LaTeX.

LaTeX is a very powerful and flexible structured document generation system that is free, and is used almost universally by mathematicians and statisticians.

LaTeX produces beautifully formatted documents, and has a special language for typesetting mathematical and statistical formulas

There are extensive facilities available online for teaching yourself LaTeX, and there is also an online development environment called *writeLaTeX* that allows you to enter and compile a LaTeXdocument from any brower, including from an iPad.

There are also some excellent free tutorial lectures and manuals available.

Introduction

LaTeX can be a bit intimidating and, like R, its error messages can be intimidating and frustrating when you first start.

A few examples can be worth a thousand words of lecturing, and those people with a serious interest in LaTeX can also get some tutorial help from me as well.

When teamed with R, RStudio, and the knitr system, LaTeX can imbed R code and the graphics and statistical output produced by that code in a beautifully formatted document.

Introduction

However, if you are in a hurry, there is a really neat way of "getting into" R, mathematical typesetting, and the concept of hybrid ("reproducible research") documents without learning the full LaTeX system, and that is the R Markdown Language.

R Markdown is an extremely simple language that allows you to embed R code and LaTeX equations in a document. One click of a button in RStudio compiles the document into HTML or Word documents.

Introduction

We'll take a quick look at a document that demonstrates many of the capabilities of the R Markdown language.

This document is titled *SampleMarkdown.html* and can be found online in the R Support Materials area, along with the source file *SampleMarkdown.Rmd* that generated it.