BST 140.776 Homework 1

Your Name

The Date

Your first homework is to recreate this document using LaTeX. Hand in both a print out of the final document and the LaTeX code, except put your correct name and the correct date in the title.

1 The first section

A good reference on LaTeXis [1]. Though I've

found that many good references are online. The thing that makes LaTeX better than **WYSIWYG**[1] programs is that

1. It makes you think about document structure
2. It is way better at typesetting mathematical equations
3. You can get things *exactly* right

A second section

When referring to Section 1, be sure to do it automatically. Don't just type in 1. This way LaTeX automatically keeps track of section references as you move things around.

By the way, some people don't like to indent their paragraphs.

Others do. Some people really don't like serifs. Others like to type in all caps.

LaTeX has some weird packages, including some for writing poetry.

[1] What you see is what you get.

So, while writing a
love sonnet to your sweetie, you
might make it extra special by
shaping it in the form of a heart.
It beats buying a card and a box
of chocolate. Just make sure
you use his/her correct
name to avoid get-
ting slapped.
♡

Remember when using "quotes" to use your quotes correctly. The following "quotes" and "quotes" look terrible. Only "quotes" looks right.

1.1 A subsection about Math

But math is what we're really all about. When writing mathematics, here is a few things to remember. Never start a sentence with a Greek letter. So the following sentence stinks:

ω is the ratio of the between to the within group variance.

Also remember to treat offset equations as if they are part of a sentence. In particular, remember the punctuation. In fact our favoriate equation is

$$E[X^2] \geq E[X]^2. \tag{1}$$

See the period at the end of (1)? By the way, when refering to equations, such as Equation 1, or sections, such as Section 1 be sure to capitalize the "E" and "S".

Don't put three periods when listing a series, use the `\ldots` command. That is, $X_1^{(t)}, \ldots, X_n^{(t)}$ is better than $X_1^{(t)}, ..., X_n^{(t)}$. Speaking of the $\{X_i^{(t)}\}$ assume they are real numbers, $X_i^{(t)} \in \mathbb{R}$.

Then we have

$$\left(\frac{1}{\sum_{i=0}^{\infty} X_i^{(t)}} \right)^{-\tau} = \begin{cases} \delta & \text{if } \tau = 1 \\ \gamma & \text{otherwise} \end{cases}$$

Leading to the system of equations

$$\begin{aligned} X_1^{(t)} &= \hat{\alpha} \\ &= \bar{X} \\ &= \int_0^{\infty} \prod \pi_i. \end{aligned} \tag{2}$$

Referencing only (2) is requires a command. Try to make Table 1 at some point. Also, read in a figure like Figure 1. Sometimes, tables and figures are put in an appendix, like in Appendix A.

References

[1] M Goossens, F Mittelback, and A Samarin. *The LaTeX Companion.* Addison-Wesley, Boston, 1994.

A Tables and Figures

Residence	Residence in 1985			
in 1980	Northeast	Midwest	South	West
Northeast	11,607	100	366	124
Midwest	87	13,677	515	302
South	172	225	17,819	270
West	63	176	286	10,192

Table 1: Residency Data

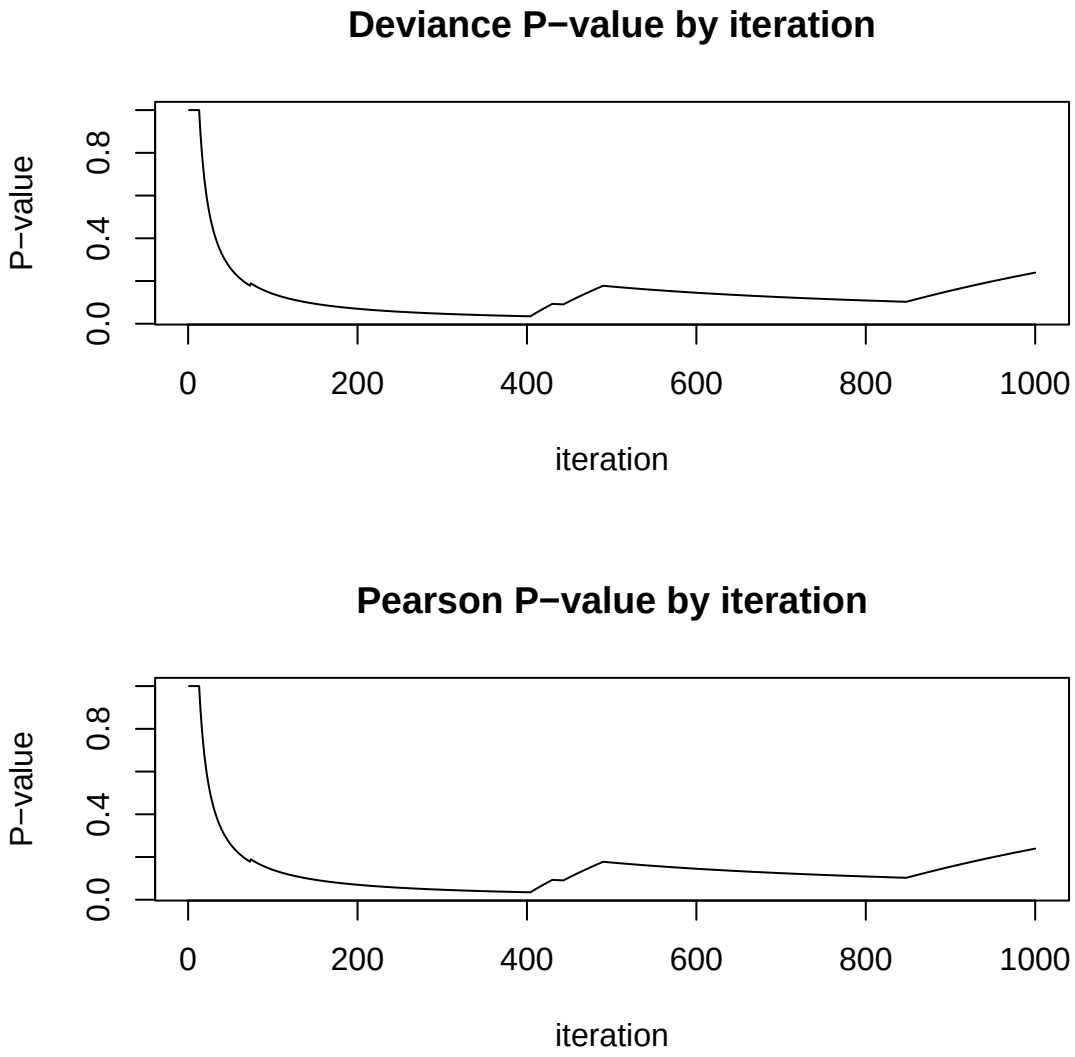

Figure 1: P-values by iteration