Pat Q. Student
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This is a sample file in the text formatter LaTeX. I require you to use it for the following reasons:

- It produces the best output of text, figures, and equations of any program I've seen.

- It is machine-independent. It runs on Linux, Macintosh (see TeXShop), and Windows (see MiKTeX) machines. You can e-mail ASCII versions of most relevant files.

- It is the tool of choice for many research scientists and engineers. Many journals accept LaTeX submissions, and many books are written in LaTeX.

Some basic instructions are given below. Put your text in here. You can be a little sloppy about spacing. It adjusts the text to look good. You can make the text smaller. You can make the text tiny.

Skip a line for a new paragraph. You can use italics (*e.g. Computations are everywhere*) or **bold**. Greek letters are a snap: Ψ, ψ, Φ, ϕ. Equations within text are easy— An approximiation for the partial derivative is $\frac{\partial u}{\partial x}\big|_y \sim \frac{u_{i+1,j}-u_{i,j}}{\Delta x}$. You can also set aside equations like so:

$$\frac{\partial u}{\partial t} \;=\; \nabla^2 u, \tag{1}$$

$$\frac{u_{i,j}^{n+1} - u_{i,j}^n}{\Delta t} \;\sim\; \frac{u_{i+1,j}^n - 2u_{i,j}^n + u_{i-1,j}^n}{\Delta x^2} + \frac{u_{i,j+1}^n - 2u_{i,j}^n + u_{i,j-1}^n}{\Delta y^2}. \tag{2}$$

References [1] are available. If you have an postscript file, say `sample.figure.eps`, in the same local directory, you can insert the file as a figure. Figure 1, below, gives plots of various Bessel functions.
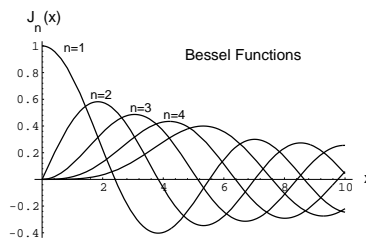

Figure 1: Sample figure plotting Bessel functions

Running LaTeX

You can create a LaTeX file with any text editor (vi, emacs, gedit, etc.). To get a document, you need to run the LaTeX application on the text file. The text file must have the suffix ".`tex`" On a Linux cluster machine, this is done via the command

    latex file.tex

This generates three files: `file.dvi`, `file.aux`, and `file.log`. The most important is `file.dvi`.

The finished product can be previewed in the following way. Execute the commands:

    dvips -Ppdf -tletter -G0 -o file.ps file.dvi   Linux System
    ps2pdf -dSubsetFonts=true -dEmbedAllFonts=true file.ps   Linux System

These commands generate `file.pdf`. The file can be viewed then via the command

    acroread file.pdf

The `.tex` file must have a closing statement as below.

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[1]Lamport, L., 1986, *LaTeX: User's Guide & Reference Manual*, Addison-Wesley: Reading, Massachusetts.

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