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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` text 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 next. 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. 

Skip a line for a new paragraph. You can use italics (*e.g. Thermodynamics is everywhere*) or **bold**. Greek letters are a snap: $\Psi$, $\psi$, $\Phi$, $\phi$. Equations within text are easy— A well known Maxwell thermodynamic relation is $\left.\frac{\partial T}{\partial p}\right|_s = \left.\frac{\partial v}{\partial s}\right|_p$. You can also set aside equations like so:

$$du = Tds - pdv, \qquad \text{first law} \tag{1}$$

$$ds \geq \frac{dq}{T}. \qquad \text{second law} \tag{2}$$

Eq. (2) is the second law. 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, plots an isotherm for air modeled as an ideal gas.

Figure 1: Sample figure plotting $T = 300\ K$ isotherm for air when modeled as an ideal gas.

*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:

```
dvipdf file.dvi                    Linux System
```

This command generates `file.pdf`. Alternatively, you can use `TeXShop` on a Macintosh or `MiKTeX` on a Windows-based machine. The `.tex` file must have a closing statement as below.

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