Lesson 8: Making Your Own Lists Name: _____

This lesson teaches you some of the basics of making lists in LaTeX. You already know about several premade lists such as the *enumerate* and *itemize* lists but it turns out that these and many others, such as *centering*, *quote*, *verse*, *description*, *flushleft* and *thebibliography* are all examples of special cases of the *list* environment. But on some occassions the builtin ones just don't do exactly what you want so you might want to define you own types of lists. This is often true in making slides for presentations.

The general syntax for creating a list with special properties is

```
\begin{list} {text1}{dec-list}  text2 \end{list}
```

1. The *text1* is what will be generated by the \item command.

2. The *dec-list* is a sequence of assignments to set various lengths that determine the appearance of the list.

3. One or more \item statements can occur in the *text2* part. This is just where you type the desired list.

If you plan to use a certain list more than once it is probably better to define it as a *newenvironment*. Here is an example in which I simply modify the current *itemize* environment. The following is the general syntax given as an example

```
\newcounter{rulecount}
\newenvironment{myrules}
{\begin{list}
{\upshape \bfseries Rule \arabic{rulecount}:}
{\setlength{\leftmargin}{1.5in}
\setlength{\rightmargin}{.6in}
\setlength{\labelwidth}{1in}
\setlength{\labelsep}{.2in}
\setlength{\parsep}{.5ex plus .2ex minus .1ex}
\setlength{\itemsep}{0ex plus .2ex minus 0ex}
\usecounter{rulecount}
\itshape} }
}
{\end{list}}
```

Here is an example

```
\newcounter{rulecount}
\newenvironment{myrules}
{\begin{list}
{\upshape \bfseries Rule \arabic{rulecount}:}
{\setlength{\leftmargin}{1.5in}
\setlength{\rightmargin}{.6in}
\setlength{\labelwidth}{1in}
```

```
\setlength{\labelsep}{.2in}
\setlength{\parsep}{.5ex plus .2ex minus .1ex}
\setlength{\itemsep}{0ex plus .2ex minus 0ex}
\usecounter{rulecount}
\itshape} }
{\end{list}}
```

and the following is how it would look:

Rule 1: *two or more spaces in latex are the same as one.*

Rule 2: *a blnak line indicates the end of a paragraph. One or more blank lines counts the same as one blank line.*

Here is a much simpler example with just a few settings.

```
\newenvironment{myitemize}{%
        \renewcommand{\labelitemi}{\ding{43}}%
        \begin{itemize}}{\end{itemize}}
```

☞ this is a test

☞ here is the new list

☞ what do you think

```
\newenvironment{nulist}%
{\begin{list}{$\diamondsuit$}{\setlength{\labelwidth}{5pt}
\setlength{\topsep}{ -.25ex}
    \setlength{\parsep}{1.15ex plus 2ex minus 0ex}
    \setlength{\itemsep}{0ex plus 0.1ex minus 0ex}
    \setlength{\leftmargin}{.12in}
    \setlength{\rightmargin}{.0in} }}
{\end{list} }
```

◇ This is a test

◇ here is what it looks like

◇ what do you think

There are two useful list environments that you might like. They are the *dinglist* and *dingautolist* environments but to use them you need to include the package *pifont* using \usepackage{pifont} in the preamble. I put a copy of this style file in my account dgilliam on hilbert in the folder quizes in math5399.

Here is an example of *dinglist*

➜ Szegö polys of the first kind.

➜ Szegö polys of the second kind

```
\begin{dinglist}{220}
\item Szeg\"{o} polys of the first kind.
\item Szeg\"{o} polys of the second kind
\end{dinglist}
```

And, here is an example of *dingautolist*

① $v(z) > 0$ for $|z| = 1$

② $\deg(v) \leq n$

③ $\widehat{c}_i = c_i$.

```
\begin{dingautolist}{192}
\item  $ v(z)>0 \text{ for }|z|=1$
\item  $\deg (v)\leq n $
\item  $\widehat{c_i}=c_i $.
\end{dingautolist}
```

PROBLEM:

Define a list environment named *bull* that has items identified by a `$\bullet$` (i.e., •) and a number, like

• 1

• 2

(Hint: Look at the example myrule)