

Exercise 1: Attempt to replicate the black text and fill in your own information for the lists. (**HINT:** You may want to use the package `enumitem` for the third list.

1 Summer

↑ this is a section header

The following is a list of things I did this summer

1. Traveled to California
2. Bought a new puppy
3. Learned L^AT_EX

2 Fall

The following is a list of things I will do this fall starting with number 24

24. Eat lots of pumpkin pie
25. Bike to see all of the colorful trees
26. Enjoy the brisk cool air before winter hits, then I will do things listed in Section 3 ← try to use a reference for the numbering

3 Winter

The following is a list of things I will do this winter

- (i) Ski
- (ii) Do tons of science
- (iii) Drink lots of hot chocolate

4 Formatting

The following is a list of my favorite formatting combinations

- favorite
- **favorite**
- **fav**orite

Exercise 1 (General Formatting):

```
\documentclass[]{article}
\usepackage{enumitem}
\usepackage{color}
\newcommand{\BlueText}[1]{\textcolor{blue}{#1}}

\begin{document}
\noindent \BlueText{\textbf{Exercise 1:} Attempt to replicate the
black text and fill in your own information for the lists.
(\textbf{\underline{HINT:}} You may want to use the package
\texttt{enumitem} for the third list.)
%\vspace{1cm}

\section{Summer}
\label{sec:summer}
\BlueText{$\uparrow$ this is a section header}

\noindent The following is a list of things I did this summer
\begin{enumerate}
  \item Traveled to California
  \item Bought a new puppy
  \item Learned \LaTeX\
\end{enumerate}

\section{Fall}
\label{sec:fall}
The following is a list of things I will do this fall starting with
number 24
\begin{enumerate}
  \setcounter{enumi}{23}
  \item Eat lots of pumpkin pie
  \item Bike to see all of the colorful trees
  \item Enjoy the brisk cool air before winter hits, then I will do
things listed in Section \ref{sec:winter} \BlueText{$\leftarrow$ try
to use a reference for the numbering}
\end{enumerate}

\section{Winter}
\label{sec:winter}
The following is a list of things I will do this winter
\begin{enumerate}[label=(\roman*)]
  \item Ski
  \item Do tons of science
  \item Drink lots of hot chocolate
\end{enumerate}

\section{Formatting}
\label{sec:formatting}
The following is a list of my favorite formatting combinations
\begin{itemize}
```

```
\item[$\circ$] \underline{\textit{favorite}}
\item[$\circ$] \textbf{\textit{favorite}}
\item[$\circ$] \textbf{fav}\textit{or}\underline{ite}
\end{itemize}
\end{document}
```

Exercise 2: Attempt to replicate the following in black text. (**HINT:** You will need the `amsmath` package and you may need to use the command `\noindent` for formatting.)

The first equation is as follows:

$$\begin{aligned}y &= 2x^3 + 4x^2 + x + 2 \\&= 2x^2(x + 2) + (x + 2) \\&= (2x^2 + 1)(x + 2)\end{aligned}\tag{1}$$

The second equation is as follows:

$$w_i = \frac{e^{(-0.5\Delta_i)}}{\left(\sum_{r=1}^R e^{(-0.5\Delta_i)}\right)}\tag{2}$$

The third equation is as follows:

$$\boldsymbol{\sigma} = \begin{bmatrix} \sigma_x & \tau_{xy} & \tau_{xz} \\ \tau_{yx} & \sigma_y & \tau_{yz} \\ \tau_{zx} & \tau_{zy} & \sigma_z \end{bmatrix}\tag{3}$$

Equation (3) is my favorite of the three. ← use an equation reference command here to get the parenthesis (ie `\eqref{}`)

Exercise 2 (Math Editing):

```
\documentclass[]{article}
\usepackage{amsmath}
\usepackage{color}
\newcommand{\BlueText}[1]{\textcolor{blue}{#1}}

\begin{document}
\noindent \BlueText{\textbf{Exercise 2:} Attempt to replicate the
following in black text.
(\textbf{\underline{HINT:}} You will need the \texttt{amsmath} package
and you may need to use the command \texttt{\textbackslash noindent}
for formatting.)}
\vspace{1cm}

\noindent The first equation is as follows:
\begin{align}
\begin{split}
y &= 2x^3 + 4x^2 + x + 2 \\
&= 2x^2 (x+2) + (x+2) \\
&= (2x^2+1) (x+2)
\end{split}
\end{align}

\noindent The second equation is as follows:
\begin{align}
w_i &= \frac{e^{\left( -0.5\Delta_i \right)}}{\left( \sum \limits_{r=1}^R e^{\left( -0.5\Delta_i \right)} \right)}
\end{align}

\noindent The third equation is as follows:
\begin{align}
\begin{matrix}
\text{\label{eq:matrix}} \\
\text{\boldsymbol{\sigma}} =
\left[
\begin{matrix}
\sigma_x & \tau_{xy} & \tau_{xz} \\
\tau_{yx} & \sigma_y & \tau_{yz} \\
\tau_{zx} & \tau_{zy} & \sigma_z
\end{matrix}
\right]
\end{matrix}
\end{align}

\noindent Equation \eqref{eq:matrix} is my favorite of the three.
\BlueText{\$ \leftarrow$ use an equation reference command here to get
the parenthesis (ie \texttt{\textbackslash eqref{\}})}
\end{document}
```

Exercise 3: Attempt to replicate the following in black text. (**HINT:** You are going to need the `graphicx` package. Also note that the margins for this document are 1.5 cm all the way around which can be done using the `geometry` package.

Below is my scientific idol. ← download your own photo to include but make sure it is in the same folder as your .tex document



Figure 1: *The Lord Rayleigh*

Below is a list of three random US presidents and some information regarding them.

No.	Name	Party	Term Start	Term End
2	John Adams	Federalist	March 4, 1797	March 4, 1801
25	William McKinley	Republican	March 4, 1897	September 14, 1901
39	Jimmy Carter	Democratic	January 20, 1977	January 20, 1981

Exercise 3 (Figures & Tables):

```
\documentclass[]{article}
\usepackage{graphicx}
\usepackage[margin = 1.5 cm]{geometry}
\usepackage{color}
\newcommand{\BlueText}[1]{\textcolor{blue}{#1}}

\begin{document}
\noindent \BlueText{\textbf{Exercise 3:} Attempt to replicate the
following in black text.
(\textbf{\underline{HINT:}} You are going to need the
\texttt{graphicx} package. Also note that the margins for this
document are 1.5 cm all the way around which can be done using the
\texttt{geometry} package.)
\vspace{1cm}

\noindent Below is my scientific idol. \BlueText{\$\rightarrow$ download
your own photo to include but make sure it is in the same folder as
your .tex document}

\begin{figure}[h]
\centering
\includegraphics[width = 0.4\textwidth]{./Rayleigh.jpg}
\caption{\textit{The} Lord Rayleigh}
\end{figure}

\noindent Below is a list of three random US presidents and some
information regarding them.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
\textbf{No.} & \textbf{Name} & \textbf{Party} & \textbf{Term}
& \textbf{Term End} \\ \hline
2 & John Adams & Federalist & March 4, 1797 & March 4, 1801 \\ \hline
25 & William McKinley & Republican & March 4, 1897 & September
14, 1901 \\ \hline
39 & Jimmy Carter & Democratic & January 20, 1977 & January 20,
1981 \\ \hline
\end{tabular}
\end{table}

\end{document}
```

Exercise 4: Attempt to replicate the following in black text.

Here is a paragraph with an indent.
Here is a new paragraph with no indent at all followed by 2 centimeters of vertical whitespace.

Here is my name in quotes in the center of the page with 1 inch of space between the first and last name. ← use your own name

“YOUR NAME”

After about 5 x’s worth of vertical space below my name, I can now say I have achieved the basics of adding whitespace.

Exercise 4 (Managing Space):

```
\documentclass[]{article}
\usepackage{color}
\newcommand{\BlueText}[1]{\textcolor{blue}{#1}}
```

```
\begin{document}
\noindent \BlueText{\textbf{Exercise 4:} Attempt to replicate the
following in black text.}
\vspace{1cm}
```

Here is a paragraph with an indent.

\noindent Here is a new paragraph with no indent at all followed by 2 centimeters of vertical whitespace.

```
\vspace{2cm}
```

Here is my name in quotes in the center of the page with 1 inch of space between the first and last name. \BlueText{\$\leftarrow\$ use your own name}

```
\begin{center}
``YOUR \hspace{1in} NAME"
\end{center}
```

```
\vspace{5ex}
```

After about 5 x's worth of vertical space below my name, I can now say I have achieved the basics of adding whitespace.

```
\end{document}
```

Exercise 5: Attempt to replicate the following in black text by following these steps.

Step 1: Create a `BIBTEX` file that includes 4 random citations. You can pull the citations from Google Scholar.

Step 2: Replicate the following sentence randomly citing 3 of these 4 references.

Step 3: Make sure to include your bibliography at the end using `ieetr` bibliography style.

Step 4: Once everything has been replicated try including the `cite` package in your preamble. What changed when you included this package?

Step 5: Now try changing the bibliography style to `apalike`. What changed?

From [1], I found out that an alternative understanding of concept of XYZ [2] was proposed in the book [3]. From attending the MEGC `LATEX` workshop, I now feel comfortable using `BIBTEX`. I even feel comfortable enough trying something new that has not been taught. For example I can now cite multiple citations at once [1, 2, 3].

References

- [1] B. L. Phillips, G. P. Brown, J. K. Webb, and R. Shine, “Invasion and the evolution of speed in toads,” *Nature*, vol. 439, no. 7078, pp. 803–803, 2006.
- [2] N. B. Davies and T. R. Halliday, “Deep croaks and fighting assessment in toads *bufo bufo*,” 1978.
- [3] C. Mattison, *Frogs & toads of the world*. Blandford, 1987.

NOTE: Since the third reference is a book, the reference like has a different style than the two articles above.

Also notice that the 4th entry of the `.bib` file doesn’t show up in the reference section since only referenced entries will be included in the References section.

Exercise 5 (Bibliographies):

```
\documentclass[]{article}
\usepackage{hologo}
\usepackage{enumitem}
\usepackage{color}
\newcommand{\BlueText}[1]{\textcolor{blue}{#1}}

\begin{document}
\noindent \BlueText{\textbf{Exercise 5:} Attempt to replicate the
following in black text by following these steps.} \vspace*{0.5cm}

\BlueText{
\begin{enumerate}[label=\textbf{Step \arabic*:}]
\item Create a \hologo{BibTeX} file that includes 4 random
citations.
You can pull the citations from Google Scholar.
\item Replicate the following sentence randomly citing 3 of these
4 references.
\item Make sure to include your bibliography at the end using
\texttt{ieetr} bibliography style.
\item Once everything has been replicated try including the
\texttt{cite} package in your preamble.
What changed when you included this package?
\item Now try changing the bibliography style to
\texttt{apalike}.
What changed?
\end{enumerate}
}

From \cite{phillips2006invasion}, I found out that an alternative
understanding of concept of XYZ \cite{davies1978deep} was proposed in
the book \cite{mattison1987frogs}.
From attending the MEGC \LaTeX\ workshop, I now feel comfortable using
\hologo{BibTeX}.
I even feel comfortable enough trying something new that has not been
taught.
For example I can now cite multiple citations at once
\cite{phillips2006invasion,davies1978deep,mattison1987frogs}.
\vspace{1cm}

\bibliographystyle{ieetr}
\bibliography{Exercise5Bib}

\noindent \BlueText{\textbf{\underline{NOTE:}}} Since the third
reference is a book, the reference like has a different style than the
two articles above.\\\
Also notice that the 4th entry of the \texttt{.bib} file doesn't show
up in the reference section since only referenced entries will be
included in the References section.

\end{document}
```