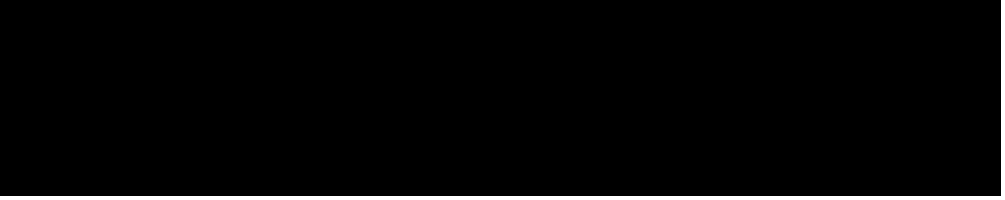
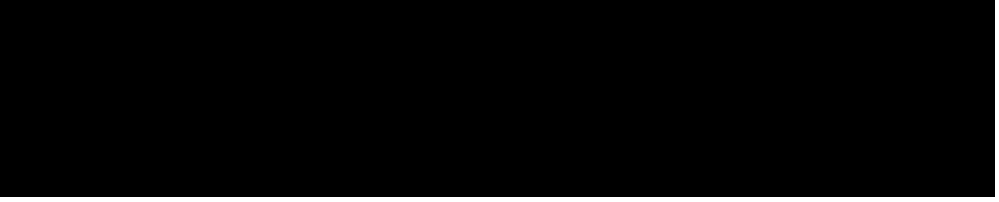


LaTeX

- LaTeX (pronounced ”lay-tek” or ”lah-tek”) is a typesetting language. LaTeX was created for the purpose of typesetting text and mathematical formulas.
- LaTeX is not a word processing program. Unlike programs like MS Word where your document is produced ”on the fly” through a ”What You See Is What You Get” (WYSIWYG) format, LaTeX files need to be processed or compiled first before the final product can be viewed.



LaTeX

1. Edit the text file (saved as filename.tex)
2. Process the file with the LaTeX program and this will create a device independent (.dvi) file.
3. View the .dvi file with a DVI viewer.
4. Return to step 1 to make further changes.
5. If no further changes are to be made, convert the .dvi file into a format like PS (postscript) or PDF (Adobe Portable Document Format) in order to print.

LaTeX Beamer

- Beamer is a LaTeX class for creating presentations that are held using a projector, but it can also be used to create transparency slides.

What is Beamer

- Beamer is a LaTeX class for creating presentations that are held using a projector, but it can also be used to create transparency slides.
- Preparing presentations with Beamer is different from preparing them with WYSIWYG programs like MS Powerpoint.
- A Beamer presentation is created like any other LaTeX document.

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- Acrobat Reader (PDF Viewer)
- Ghostscript, Ghostview and GSview (PS Viewer)

LaTeX

- Acrobat Reader (PDF Viewer)
- Ghostscript, Ghostview and GSview (PS Viewer)
- MiKTeX or fpTeX (Complete Setup)
- cwTeX (Add Chinese Fonts and Typesetting)
- WinEdt (Typesetting English and Chinese)
- TeXnicCenter or WinShell (Typesetting English Only)

Result

Notes

Result

Problems

1. Prove the generalized version of the basic counting principle.
2. How many 5-card poker hands are there?
3. Show that any subset of a well-ordered set is well ordered.

Typesetting

```
Problems  begin enumerate  item Prove the generalized version
of the basic counting principle.
 item How many 5-card poker hands are there?
 item Show that any subset of a well-ordered set is well ordered.
 end enumerate
```

Introduction

Basic Structure and Commands

Table, Figure, Abstract and Reference

Result

Result

$$\square \quad \square \overline{\qquad\qquad} \\ a$$

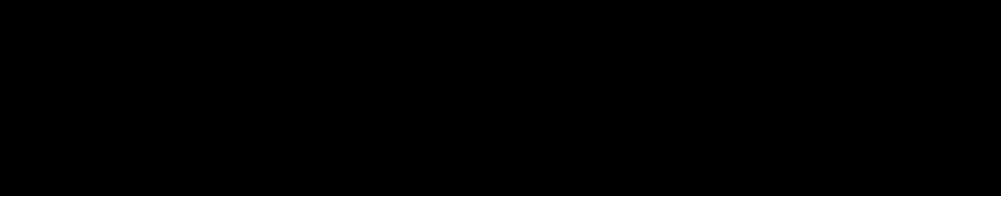
Result

$$\int 2x\cos x\,dx = 2x\sin x - \int 2\sin x\,dx \quad (1)$$

$$= 2x\sin x + 2\cos x + C. \quad (2)$$

Typesetting

```
\begin{eqnarray}
\int2x\cos xdx &=& 2x\sin x-\int2\sin xdx\\
&=& 2x\sin x+2\cos x+C.
\end{eqnarray}
```



Result

p	q	and
T	T	T
T	F	F

Typesetting

```
\begin{center}\begin{tabular}{lcclcl} \hline
$p$ & $q$ & and\\ \hline \hline T & T & T\\ T & F & F\\
\hline \end{tabular}\end{center}
```

Figure

Are you tired?

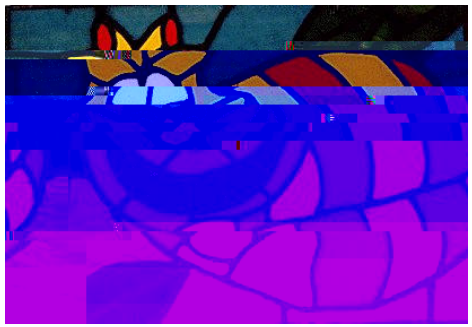


Figure:

Typesetting

```
\begin{center} \begin{figure}
\includegraphics[height=0.8in]{cat.jpg} \caption{Are you tired?}
\end{figure} \end{center}
```

Ab

Result

Abstract

It is proven that the celebration of birthdays is healthy. Statistics show that those people who celebrate the most birthdays become the oldest.

Typesetting

```
\begin{abstract} It is proven that the celebration of birthdays is
healthy. Statistics show that those people who celebrate the most
birthdays become the oldest.
\end{abstract}
```

Result

Result

Result

Jiang W. (2002). On weak base hypotheses and their implications for boosting regression and classification. *Annals of Statistics*, **30**, 51–73.

Typesetting

```
\begin{thebibliography}{Tototo} \bibitem[Jiang W., 2002]{JW02} {\sc Jiang W.} (2002). On weak base hypotheses and their implications for boosting regression and classification. {\em Annals of Stntistics}, {\bf 30}, 51–73. \end{thebibliography}
```

Section and Subsection

\section{...} \subsection{...}
\begin{frame}
.....
\end{frame}
.....
\section{...} \begin{frame}

Outline

\maketitle \begin{frame}
\frametitle{Outline} \tableofcontents
\end{frame}

Inner Theme

Typesetting

```
\documentclass{beamer}
\usetheme{Warsaw}
\useinnertheme{rectangles}
\useoutertheme{infolines}
      ......
```

Other Inner Themes

{circles}, {rounded}, {inmargin}, ...

Other Outer Themes

{split}, {shadow}, {smoothtree}, ...

Typesetting

```
ndocumentclassfbeamerg
nusethemefWarsawg
nuseinnerthemefrectangles g
nuseouterthemefinfolines g
nusecolorthemefalbatross g
      ......
```

Other Color Themes

f crane g, f dove g, f beetle g, f

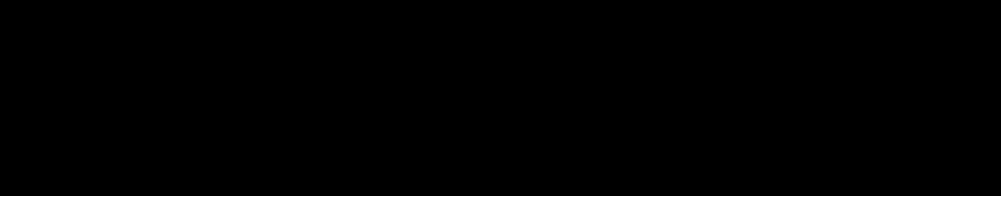
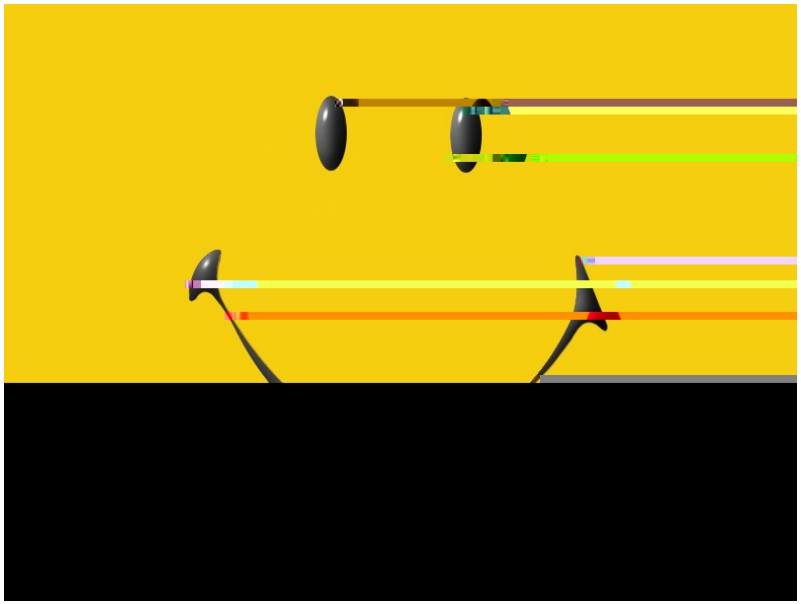
Ch□n

Typesetting

```
\documentclass{beamer}
\usetheme{Warsaw}
\useinnertheme{rectangles}
\useoutertheme{infolines}
\usecolortheme{albatross}
      ......
```

Other Color Themes

{crane}, {dove}, {beetle}, {fly}, ...



Some Guides