

Math 235: Calculus Lab

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Olin 234

Week 3

This week:

- ▶ More about LaTeX.
- ▶ A few more notes about Maple.
- ▶ Homework this week: Given a mathematical problem, write up the solution in LaTeX.

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Instead:

‘‘Two single apostrophes from left side of keyboard,
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Which results in:

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Some Notes About Writing

Example 1: Inline or Display Math mode?

“If d is Bob’s distance above the ground in feet, then $d = 100 - 16t^2$, where t is the number of seconds after Bob’s Flugelputz-Levigator is activated. Solving for t in the equation $100 - 16t^2 = 0$, we find that $t = 2.5$. Bob hits the ground after 2.5 seconds.”

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Multiple Equations

$$\begin{aligned}3^{2x} - 2^x &= -1 \\(3^x)^2 - 23^x + 1 &= 0 \\(3^x - 1)^2 &= 0\end{aligned}$$

were typeset using the following code. Remember `amsmath`

In the header:

```
\usepackage{graphicx,fullpage, amsmath}
```

In the text:

```
\begin{align*}3^{\{2x\}}-2^x&=-1\\(3^x)^2-23^x+1&=0\\(3^x-1)^2&=0\end{align*}
```

General Comments

- ▶ Use a passive voice in writing math.
- ▶ Never start a sentence with variable name.
- ▶ Do not say “See figure below”. In LaTeX, write
See Figure `\ref{LabelName}`.

See the sample from Stewart's Calculus. Note how they use `displaymath` and the voice that is used. If you're ever unsure of how something should be typeset, a calculus text is usually a good guide.

Summary of Writing Issues

- ▶ Quotation marks.
- ▶ Aligning equations.
- ▶ Use of passive voice.
- ▶ Never start a sentence with a variable name.
- ▶ Functions versus variables: `\sin`, `\cos`, etc.
- ▶ Be sure and use the figure environment when putting in figures.
- ▶ Be sure figure captions state what we should be looking at.
- ▶ Do not say “See figure below”. In LaTeX, write
See Figure `\ref{LabelName}`.

This week, we'll look at some plotting options. For the remaining time today, you may work on this week's lab.