1 this is a section heading

1.1 this is a subsection heading

1.1.1 this is a subsubsection heading

So you want to try some tex?

Inline math is like this $TRUE = (\lambda xy.x)$

Or they can go on their own line like this

$$FALSE = (\lambda xy.y)$$

You can get different sized parentheses like this:

$$\Big(\Big(\big((()\big)\big)\Big)\Big)$$

If you wanted to do the full notation (don't) the application is $\cdot$, e.g. $\Big(\lambda x.\big(\lambda y.(y \cdot x)\big)\Big)$

You can do subscripts in math x_1, x_2, x_{12}, and superscripts x^1, x^2, x^{12}, or both Σ_{bar}^{foo}

Some fancy symbols: $\rightarrow, \rightarrow_\beta, \twoheadrightarrow_\beta, \equiv, =_\beta$ ...

Some not so fancy symbols: $\{a, b, c\}$ ... (we had to escape the brace with a backslash)

Later in the course you might want some these too $\wedge \vee \Rightarrow \Leftrightarrow \vdash$

In general, if you need to find a symbol go look at `http://detexify.kirelabs.org/classify.html`

Often you want to line up formulas:

$$\begin{aligned}
& F\ \{a,b,c,d\} \\
&= (Y\ H)\ \{a,b,c\} && \text{(Y Combinator)} \\
&= H\ (Y\ H)\ \{a && \text{(Y Combinator)} \\
&= \Big(\lambda fa.\big(ISNIL\ (TAIL\ a)\big)\ (HEAD\ a)\ \big(f\ (T && \text{(Y Combinator)} \\
&= \Big(\lambda a.\big(ISNIL\ (TAIL\ a)\big)\ (HEAD\ a)\ \big((Y\ H\ \{ && \text{(β-reduction)} \\
&= \ldots
\end{aligned}$$

It aligns the & characters. Don't forget the double backslashes to end each line.

I'll admit, manually adding all those spaces in mathmode is pretty annoying. I expect there's a much better way to typeset stuff.

If you don't put a blank

line between lines with text then there isn't a gap

- bullet
- points

1. numbered
2. points

tables	are	nice	once
you			get
the	hang		of
them			

Here's some `truetype font` for where you don't need *fancy* **highlighting**.

```
;; here's some source code, for when you do
;; it's verbatim -- you get exactly what you write, see: $\equiv_\beta$
(defun insert (tree x)
;; inserts x to the binary search tree
)
(defun list-to-tree (mylist &optional tree)
;; note: the second argument 'tree' will be nil by default
;; inserts every element of the list 'mylist' into the tree
)
(defun inorder (tree)
;; list giving the inorder traversal of the tree
)
```

OK, that wasnt very fancy. You can make it prettier if you really want, e.g.

https://www.overleaf.com/latex/examples/syntax-highlighting-in-latex-with-the-listings-packag
jxnppmxxvsvk#.W4J-guj7QuV