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:

$$\left(\left(\left(\left((0)\right)\right)\right)\right)$$

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

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:

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

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-package
jxnppmxxvsvk#.W4J-guj7QuV

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