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Course Code 123: Assignment n

This .tex LaTeX file is the learning version, prepared by Kat Matheson.
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For the template, simply delete everything below the comment *%%delete-me* and save your own.
Make sure to keep the \end{document} line, though!

Contents

1 LaTeX

LaTeX has odd spacing.
if you write a line and continue on the next one, you might notice a problem
if you write a line and something else
and continue on the next one, you might notice it's fixed, sort of?
what if... hmmmmm
now?
how about now?
where are my spaces?
i guess i only need one...

this is normal text, **but this is bolded.**
this is normal text, *this is italicized*, and *this is emphasized*

this is normal text, `and this is cool math-ish pc-looking text`
this is large this is Large
this is large with spacing from
this is Large

over here
weeeeeeeeeeeeeeee

weeeee

eeeeeeeeeeee

2 Math

a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z
1,2,3,4,5,6,7,8,9,0
$a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z$
$1, 2, 3, 4, 5, 6, 7, 8, 9, 0$

$$a, b, c = 1, 2, 3 = \sum_{i=1}^{j} \int_{0}^{\infty} e^{ix} \, dx$$

`greek letters for variables`
$\alpha, \beta, \gamma, \sigma, \theta, \epsilon, \varepsilon$

`math symbols`
$\sum_{i=1}^{n}$, $\prod_{i=1}^{n}$, $\bigcap_{i=1}^{n}$, $\bigcup_{i=1}^{n}$
$a + b$, $a - b$, $a \pm b$
$\frac{a}{b}, a/b$
$a > b, a \geq b, a < b, a \leq b$
$a \neq b, a \sim b, a \approx b, a \simeq b$
$a \cdot b, a \times b, a * b$
$a^b, a^{2b}, a^2 b$
$a_b, a_{2b}, a_2 b$
$A \cup B, A \cap B, A \setminus B$
$A \subset B, A \subseteq B, A \supset B, A \supseteq B$
$\in, \notin$
$\forall$, $\exists$, $\implies$, $\impliedby$, $\iff$
$a \land b, a \lor b$
$\mathbb{P}(a + b) < \mathbb{E}(c \pm d)$
$x \in \mathbb{N}, y \in \mathbb{R}, z \notin Z, \alpha \in \mathbb{Q} \setminus (\mathbb{N} \cap \mathbb{Q}^c)$
and so on $\cdots$
and so on $\ldots$

`math auto-sizing brackets`
$(2 + 2)$
$\left[\left(2 + \frac{1}{2}\right)\right]$
$\left\{((2 + 2)) > \bigcap_{i=1}^{n} \frac{\sum_{i=1}^{n} (i+1)^2}{\theta_1}\right\}$

$$\left(1 + \bigcap_{i=1}^{n} \frac{\sum_{i=1}^{n} (i+1)^2}{\theta_1}\right)$$

`math comments`

$$a = b \text{ because science}$$

$$andd = e \text{ because}$$

$$b = c \qquad \text{according to my mom}$$

$$
\begin{aligned}
x &= y \\
&\sim \theta - 3 \text{ because i said so} \\
&= z + 1 \quad \text{because i said so} \\
&< z + 3 \qquad \text{because i said so}
\end{aligned}
$$

(1)

$$
\begin{aligned}
x &= 2 & i &= 1 \\
x &= 3 & i &= 2
\end{aligned}
$$

`matrices`

$$
\begin{bmatrix} 0, 1, 2 \\ 3, 4, 5 \\ 6, 7, 8 \end{bmatrix} \quad \begin{pmatrix} 0, 1, 2 \\ 3, 4, 5 \\ 6, 7, 8 \end{pmatrix}
$$

`cases`

$$
f(x) = \begin{cases} \frac{1}{2} & \text{if } x > 0 \\ \theta_0 & \text{if } x = 0 \\ 0 & \text{otherwise} \end{cases}
$$

`Examples`

$$
\sum_{i=1}^{n} \left(\frac{x_i + y_i}{2^i} \right)^{i-1}, \quad \frac{\sum_{i=1}^{n} x_i}{n}, \quad \frac{\int_0^1 \frac{a}{x^{-2}} \, dx}{2}
$$

3 Algorithms