### Course Code 123: Assignment n

This .tex LATEX file is the learning version, prepared by Kat Matheson. Any questions should be directed to g3.matheson@gmail.com

If you lost the template, simply delete everything below the comment %% delete-me and save your own. Make sure to keep the  $\end{document}$  line, though or it might go on forever.

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### 1 $\mathbf{E}_{\mathbf{T}}\mathbf{E}_{\mathbf{X}}$

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...

i could do this though

i can write in the middle

or over here to write my name and student ID in the top right corner

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 or you can be small  $_{\rm or\ even\ tiny}$ 

over here

weeeeeee

.....

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

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+b

 $\frac{a}{b}$ , a/ba > b, a > b, a < b, a < b

 $a \neq b, a \sim b, a \approx b, a \simeq b$ 

 $a\cdot b, a\times b, a*b$ 

 $a^b, a^{2b}, a^2b$ 

 $a_b, a_{2b}, a_2b$ 

 $A \cup B, A \cap B, A \setminus B$ 

 $A \subset B, A \subseteq B, A \supset B, A \supseteq B$ 

 $\in$ ,  $\notin$ 

 $\forall$ ,  $\exists$ ,  $\Longrightarrow$ ,  $\Longleftarrow$ ,

 $a \wedge b$ ,  $a \vee b$ 

 $\mathbb{P}(a+b) < \mathbb{E}(c \pm d)$ 

 $x \in \mathbb{N}, y \in \mathbb{R}, z \notin Z, \alpha \in \mathbb{Q} \setminus (\mathbb{N} \cap \mathbb{Q}^c)$ 

and so on  $\cdots$ 

and so on ...

math functions

$$\sin(x), \cos^2(x), \tan(\theta)$$
$$e^{x_i^2}, \log_2(x)$$

$$f'' = f^{(2)} = \frac{d^2 f}{dx^2} \neq \frac{\partial^2 f}{\partial x \partial y}$$

math auto-sizing brackets

$$(2+2)$$

$$[(2+\frac{1}{2})]$$

$$\{((2+2)) > \bigcap_{i=1}^{n} \frac{\sum_{i=1}^{n} (i+1)^{2}}{\theta_{1}} \}$$

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

math comments

$$a = b$$
 because science

andd - e because

b=c

according to my mom

$$x = y$$
  
 $\sim \theta - 3$  and some other text  
 $= z + 1$  and some other text  
 $< z + 3$  and some other tex

$$x = 2$$

$$x = 3$$

$$i = 1$$

$$i = 2$$

matrices

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

cases

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

(1) 
$$\sum_{i=0, i\neq k}^{n-1} x_i^2$$

$$\sum_{i=0, i \neq k}^{n-1} x_i^2$$

(3) 
$$\sum_{i=1}^{n} \frac{x_i + y_i}{2^{i^{i-1}}}$$

$$(4) \prod_{i=1}^{n} \left(\frac{x_i + y_i}{2^i}\right)^{i-1}$$

$$(5) \ \frac{\sum_{i=1}^{n} x_i}{n}$$

$$(6) \quad \frac{\int_0^1 \frac{a}{x^{-2}} \ dx}{2}$$

# 3 Algorithms

# 4 Trees

more on drawing trees (here) (this is a hyperlink, it will open the default browser from a pdf click) see the .tex file for how to draw the tree

