CSE 4714 (SWE) 2024 Section B Lab 2

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1 Modes

First of all, there are two modes.

1.1 Inline math

We can write a mathematical expression as, $(a+b)^2 = \quad a^2 + 2ab + b^2$. We can also write inline maths as $(a+b)^2 = a^2 + 2ab + b^2$. Or, $(a+b)^2 = a^2 + 2ab + b^2$.

1.2 Display Math

We can create display maths as,

$$(a+b)^2 = a^2 + 2ab + b^2$$

We can also write display maths with,

$$(a+b)^2 = a^2 + 2ab + b^2$$

Or, with,

$$a + b = 2 \tag{1}$$

$$a + b = 2 \tag{2}$$

$$(a+b)^2 = a^2 + 2ab + b^2 \tag{3}$$

In subsection 1.2, in Equation 3, we can find the formula for a plus b whole square.

2 Subscript and Superscript

$$X_{(i,j)}^{2000} = 10 \tag{4}$$

3 Math Operators

$$1 + 2 = 5 - 2 = 6/2 = 1.5 \times 2 \tag{5}$$

$$sin^2\theta + cos^2\theta = 1 \tag{6}$$

$$\sin^2\theta + \cos^2\theta = 1 = \log 10, \text{ this is a simple equation} \tag{7}$$

We can write, an inline equation, $\frac{a}{b} = \frac{5}{10}$

$$\frac{a}{b} = \frac{5}{10} \tag{8}$$

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4 Brackets

$$\sqrt{\frac{\frac{a+5\times3}{\frac{2}{3}}}{\frac{2}{3}} + 5\Bigg\}} \times 3 = \frac{1}{\sqrt{2}} \tag{9}$$

5 Greek Alphabets

$$\alpha A \beta B \gamma \Gamma \delta \Delta \tag{10}$$

6 Calculus

$$\lim_{x \to \infty} \frac{1}{x} = 0 \tag{11}$$

$$\int_{10}^{200} x dx = 500 \tag{12}$$

$$\int\limits_{10}^{200} x dx = 500 \tag{13}$$

$$\sum_{i=10}^{200} x_i = 500 = \prod_{i=10}^{200} x_i \tag{14}$$

7 Calligraphy

$$\mathcal{ABCDEF}, \mathfrak{ABCDEF}, \mathbb{ABCDEF} \tag{15}$$

8 Comparison Operators

$$1 = 1 < 5 > 2 \neq 4 \leq 5 \geq 3 \not> 5 \tag{16}$$

9 Sets and Vectors

$$A \cup B \cap C \in \mathbb{R} \tag{17}$$

$$\vec{A} = \vec{B} \tag{18}$$

$$\hat{i} \times \hat{j} = \hat{k} \tag{19}$$

$$\vec{A} \cdot \vec{B} = 5.32 \tag{20}$$

10 AMS Math Environments

$$a + b = 3$$

$$\begin{aligned} 1+2+3+4+1+2+3+4+1+2+3+4+ \\ 1+2+3+4+1+2+3+4+1+2+3+4+ \\ 1+2+3+4+1+2+3+4+1+2+3+4+ \\ 1+2+3+4+1+2+3+4+1+2+3+4+... = \infty \end{aligned} \tag{21}$$

$$\begin{aligned} \frac{a}{b} &= \frac{5}{10} \\ &= \frac{1}{2} \\ &= 0.5 \end{aligned} \tag{22}$$

$$a + b + c = 5 \tag{23}$$

$$a - 2b + 4c = 15 \tag{24}$$

$$-5a - 2b + 7c = -5 \tag{25}$$

$$a + b + c = 5 \tag{26}$$

$$a = 15 \tag{27}$$

$$-2b + 7c = -5 \tag{28}$$

11 Matrices

$$I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$