SUMS LaTeX Workshop Handout FA23

SUMS at UCSD

October 23, 2023

1 Introduction to Lists

- This is a bulleted list.
- Each line is made with a command, and ended with another.
- Try make another list, but this time numbered.

Make a numbered list here with three items:

1. 1
2. hi
3. hello

2 Equations

Fractions can be added using $\frac{numerator}{denominator}$.
The dollar signs and other math environments put you into math mode.

The quadratic formula is $\frac{-b \pm \sqrt{b^2+4ac}}{2a}$.

The quadratic formula is

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-b \pm \sqrt{b^2 + 4ac}}{2a} \tag{1}$$

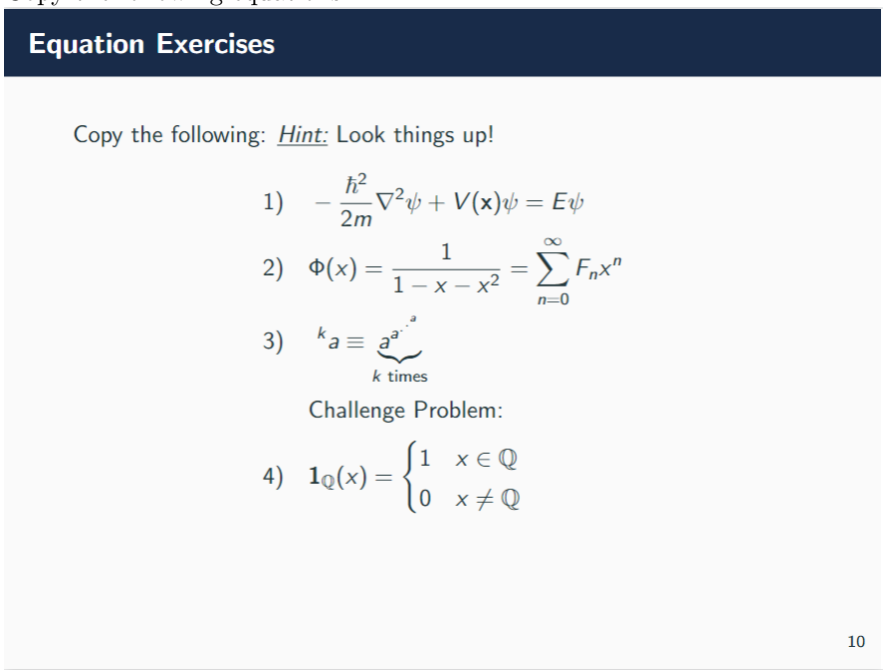
$$\frac{-b \pm \sqrt{b^2 + 4ac}}{2a} \tag{2}$$

Notice that the above two equations are numbered. The following is not:

$$\frac{-b \pm \sqrt{b^2 + 4ac}}{2a}$$

3 Writing Equations

Copy the following equations:



Copy the equations in the slide/image:

1) $-\frac{\hbar^2}{2m}\nabla^2\psi + V(\mathbf{x})\psi = E\psi$

2) $\Phi(x) = \frac{1}{1-x-x^2} = \sum_{n=0}^{\infty} F_n x^n$

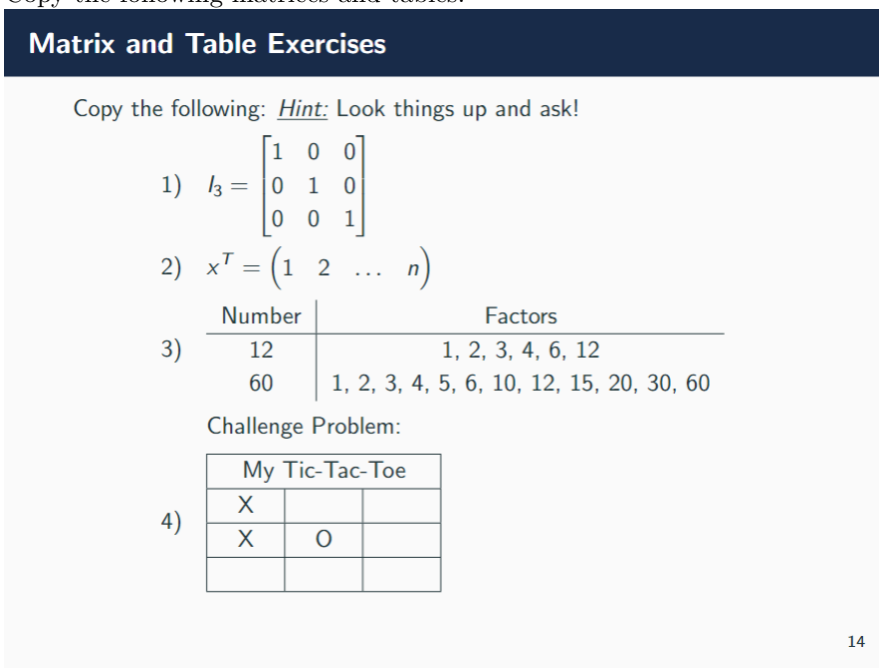
3) ${}^k a \equiv \underbrace{a^{a^{\cdot^{\cdot^{a}}}}}_{k \text{ times}}$

Challenge Problem:

4) $\mathbf{1}_{\mathbb{Q}}(x) = \begin{cases} 1 & x \in \mathbb{Q} \\ 0 & x \notin \mathbb{Q} \end{cases}$

4 Matrices and Tables

Copy the following matrices and tables:



Matrix and Table Exercises

Copy the following: *Hint:* Look things up and ask!

1) $I_3 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

2) $x^T = \begin{pmatrix} 1 & 2 & \dots & n \end{pmatrix}$

3)

Number	Factors
12	1, 2, 3, 4, 6, 12
60	1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

Challenge Problem:

4)

My Tic-Tac-Toe		
X		
X	O	

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Copy the matrices/tables in the slide/image:

1) $I_3 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

2) $x^T = \begin{pmatrix} 1 & 2 & \dots & n \end{pmatrix}$

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Number	Factors
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Challenge Problem:

4)

My Tic-Tac-Toe		
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