MATH 3094 SURVEY AND LATEX PRACTICE

REPLACE THIS TEXT WITH YOUR PREFERRED FIRST NAME AND
YOUR LAST NAME

This document is a beginning of the semester survey done in LATEX so that I can get to know you and you can practice with LATEX. Answer each of the following questions. My comments in the source code (in blue) should help you with the LATEX commands.

(1) What is your home town?
(2) What was the hobby you shared on the first day of class and how you got good at it? What are some favorite sports or activities that you are involved in at UConn?
(3) What is your favorite (math or otherwise) class in college and high school so far?
(4) What are some of your goals (academic or otherwise) for this semester?

(5) What are some of your goals for after college?
(6) What do you hope to get out of this class? Why are you taking this class?
   • Replace this text with your answer to the first question
   • Replace this text your answer to the second question
(7) Please list all college-level/AP classes in math/CS/stats/logic/philosophy/logic-based political science, etc which you have successfully completed in the past 3 years:
   (a) replace this text with a class
   (b) replace this text with another class
   (c) replace this text with another class
(8) If
$$f(x) = x^3 + e^x$$
then the derivative of f is ...
(9) A sequence is defined by
$$x_n = \frac{n}{n^2 + 1}.$$
What is a formula for x_{n+1}?

(10) Using the sequence in problem (9), what is
$$\lim_{n \to \infty} x_n?$$

(11) What Greek letters are used in the definition of the limit? (How about epsilon and delta, but I want you to typeset them. For example, to write the Greek letters alpha and beta, you would simply type α and β. If you wish, you can look up and practice writing your favorite Greek letters.)

(12) A permutation f of the set $\{1, 2, 3, \ldots, n\}$ is defined as a bijection $f : \{1, 2, 3, \ldots, n\} \to \{1, 2, 3, \ldots, n\}$.

(13) Express $1 + \frac{1}{2} + \left(\frac{1}{2}\right)^2 + \cdots$ using a summation.

(14) Please look at the source code for an example of typing a matrix. Consider the matrices (which we will use later to represent rigid motions)
$$R = \begin{bmatrix} -1 & 0 & 0 \\ 0 & \cos\theta & \sin\theta \\ 0 & \sin\theta & -\cos\theta \end{bmatrix} \quad \text{and} \quad S = \begin{bmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}.$$
Recall or google how to compute the *determinant* of a 3×3 matrix, and compute $det(R)$ and $det(S)$.

(15) Write below a non-diagonal 3×3 matrix (or larger) which has determinant -1.

(16) Imagine that you have written a book-length or article-length autobiography about your mathematical experiences. *Write a passage, thought as a quote from your autobiography, that reveals something significant about you mathematically.* Please be as creative as you like. In case you are not feeling creative, here are a few suggested prompts: a story of your mathematical past; your current feelings about mathematics; positive and negative episodes from past math courses; moments in which math came up in other situations; plans for the future.
Note: Your submission will be kept confidential, but you'll be asked to share a sentence with the rest of the class.