MATH 112: Introduction to Analysis
Fall 2025 Semester
Writing Activity I: Due Thursday September 04, 10:00am PST.

Instructions:

- Write your full name, "Writing Activity I", and the date at the top of the page.
- Write, to the best of your ability, a thorough solution to the problems below.
- Copy the problem statements before beginning each solution.
- Show all work and explain your reasoning. Write in complete sentences.
- Bring a hand-written or printed copy of your written solution to class.
- In addition to printing your work, submit a scanned .pdf file of your work to Gradescope under the assignment "Writing Activity I". It is important that you (i) do not submit an image file and (ii) that you connect problems to pages in the submission process. This last item (ii) is very important going forward, so I want to be sure you can do it.
- Finally, note: the deadline for Gradescope submission is 10:00am, not 10:30am.
- Optional: go through the short video tutorial linked in the syllabus to learn how to type up your mathematical writing in LaTeX using Overleaf and type up your solutions. This is slow at first, but pretty soon it saves you a lot of time. Plus, you have to learn how to do this for Homework 2 anyway, so you might as well do it early.

☐ **Problem 1** [Arithmetic] Simplify

$$n = (1+1)^{1-1} \times (10)^{1+1} + (1-1)^{1+1} \times (10)^{1 \times 1}$$

and then evaluate $(-1)^n$.

☐ **Problem 2** [Algebra and Geometry] Find a point on the line $y = x$ in the Cartesian plane that is distance 5 from the point $(2, 1)$ and whose x-coordinate is positive.

☐ **Problem 3** [Optional] Share any thoughts or questions you'd like about the readings:

IA	Preface:	Calculus and infinitesimals
L0	Paradoxes:	Decimal expansions and the continuum
L1	Sets I:	Cardinalities, enumerations, and operations

IMP	Preface:	The pattern of what we already know
P0	Paradoxes:	Logical processes and machines
P1	Propositions:	Truth values, negation, and connectives