

Problem of the Week

Week 13, due Apr 21th 11.59pm

NAME: _____
NAU Email: _____
Instructor: _____

Please write clean, neat and complete solutions to the problem in order to receive full credit. Your job is to convince me, or really anybody who reads this document, that you understand the problem and are able to communicate what you are thinking about. Please submit your solutions through Gradescope(<https://www.gradescope.com/>) by the indicated deadline. You might need to create an account with your NAU email. To enroll into the Problem of the Week course use entry code: NYZ56P. Good luck and have fun! **NO CHATGPT, etc. IS ALLOWED WHEN WORKING ON THE PROBLEM.**

PROBLEM. Find the value of the constant c such that the parabola $f(x) = cx^2$ is tangent to the natural logarithm curve $g(x) = \ln(x)$. Once c is determined, find the area of the right triangle formed by the origin $(0, 0)$, the point of tangency P , and the projection of P onto the x -axis.

You are allowed to look up basic definitions and theorems from calculus, but NO CHATGPT, etc. IS ALLOWED WHEN WORKING ON THE PROBLEM.