

# CALC 400

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August 2025 - December 2025

Repository

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## Week 1:

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## Week 7: Exam :: 2

### TMV: PS 1

Problem 7.1: Find Derivative of the following function

$$y = \cot^{-1}(4\log_5(x) + \sin^7(3^x))$$

Solution

$$\frac{dy}{dx} = -\frac{1}{1 + (4\log_5(x) + \sin^7(3^x))} * \frac{28(\sin(3^x))^6 \cos(3^x) 3^x \ln(3)}{x \ln(5)}$$

### Problem Set: 2

Problem 7.2: Implicit Differentiation

Find  $\frac{dx}{dy}$  of the following equation

$$3x^3 + 8x^2y + 3y^2 = 9$$

Problem 7.3: Find Tangent Line

$$y = \log(x^2 - 4x + 1)$$

Step 7.3.1: Step