

Homework 3

Due Date: 1/03

*Please write out all steps in detail, along with the formulas or rules used.

- **Problem 1 (Product Rule):**

Find the derivative of the following function:

➤ $f(x) = (2x^3 + x^2)(\sin(x) + x^4)$

- **Problem 2 (Quotient Rule):**

Find the derivative of the following function:

➤ $g(x) = \frac{x^3+5}{\cos(x)}$

- **Problem 3 (Chain Rule):**

Find the derivative of the following function:

➤ $h(x) = \cos^3(x^2 + 1)$