Practice Computational Test (Lec 18 Supp)

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Instructions

Compute the derivative of each of the following functions.

- You do not need to simplify.
- You do not need to show steps.
- No calculator is allowed.
- Be extremely careful with notations, signs, parentheses, etc.

Problem 1

$$f(x) = x^4 e^{\sqrt{x}} + e^{\sqrt{3}} \cdot \big(\ln(x)\big)^{\sqrt{4}}$$

Problem 2

$$f(x) = x^3 - \pi^6 + 6^x$$

Problem 3

$$f(x) = (7x + 1)^{2x}$$

Problem 4

$$f(x) = \frac{3x\cot(x)}{6x + \ln(x)}$$

Problem 5

$$f(x) = \left(2x + \sin\left(\sqrt{x} + 5\right)\right)^5$$

Problem 6

$$f(x) = \frac{\sec(8)}{\sqrt[5]{x}} + \frac{\sec(x)}{\sqrt[5]{8}} + \frac{e^6}{\sqrt[3]{6}}$$

Problem 7

$$f(x) = \cos(x)\left(5x^4 + 2x\right)$$

Problem 8

$$f(x) = \ln(4)\tan(2x+1) + \csc^5(2x+1)$$