

YOUR NAME: \_\_\_\_\_

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Compute the following derivatives:

(a)  $[x^3 \ln(e^x + x^2)]' =$

(b)  $\left[\frac{e^{5x}}{x^2 + 1}\right]' =$

(c)  $[(e^{x^2} - e^{2x} + \ln x)^3]' =$

2. Compute the integrals using the sum/difference and/or power rules:

(a)  $\int \sqrt[3]{x} dx =$

(b)  $\int \left( x^2 + \frac{1}{\sqrt[5]{x^3}} \right) dx =$