- **To use this as a practice quiz, you should have studied the problem banks in advance.**

- **Put away all material and set a timer for 10 minutes. (You will have 10 minutes for this quiz in class.)**

- **Go to your math mentors study hours to check your answers.**

Practice Quiz Derivatives, Fall 2017   Version: 1

Name (Print):⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯   RIN:⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Math Mentor Name:⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Rules: Notes, calculators, cell phones and headphones are not allowed.

Honor Code Pledge: I did not violate any rules on this quiz and have no knowledge of any other student violating rules on this quiz. ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯(Signature)

Instructions: Put your final answer in the box shown. No partial credit will be given and nothing outside the box will be graded.

1. Let $y = e^t + t^5 - 2\,t^{\frac{5}{2}}$. Find $\dfrac{dy}{dt}$. Express your answer in terms of elementary functions.

2. Differentiate the function $f(x) = \left(3\,x^3 + 5\,x + 3\right)\left(5\,x^4 + 3\,x + 2\right)$. Express your answer in terms of elementary functions.

3. Differentiate the function $h(x) = \dfrac{e^x}{e^x + 6\,x^4 + 3}$. Express your answer in terms of elementary functions.

$$\boxed{}$$

4. Differentiate the function $f(x) = \left(2\,x^3 - 4\,x^2 + 11\right)^3$. Express your answer in terms of elementary functions.

$$\boxed{}$$

5. Differentiate the function $g(x) = \sqrt{3\,e^{2\,x} + 2}$. Express your answer in terms of elementary functions.

$$\boxed{}$$