

# MTH 1125 11am Class - Test #4

FALL 2019

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Name \_\_\_\_\_

Show **CLEARLY** how you arrive at your answers!

1. **Compute:**  $\int (12x^5 + 9x^2 + 4x + 3 + 3\sqrt{x}) dx =$

2. **Compute:**  $\int (9x^2 + 6x + 2)^9 (3x + 1) dx =$

3. **Compute:**  $\int (5 \sin(x) + 4 \sec^2(x) - 3 \csc(x) \cot(x)) dx =$

4. **Compute:**  $\int \cos(10x^2 + 10x + 4) (4x + 2) dx =$

5. **Compute:**  $\int_{-1}^1 (4x^3 + 3x^2 + 5) dx =$

6. **Compute:**  $\int_{-1}^1 (3x^3 + 1)^3 x^2 dx =$

7. **Compute:**  $\int \frac{x^2 - 2x + 1}{x^3 - 3x^2 + 3x + 5} dx =$

8. **Compute:**  $\int \frac{x^2-2x+1}{(x^3-3x^2+3x+5)^4} dx =$

9. **Compute:**  $\frac{d}{dx} [\ln (5x^4 + 2 \sin(x))] =$

10. **Compute:**  $\frac{d}{dx} \left[ \ln \left( \sqrt{\frac{x^2-1}{\cos(x)}} \right) \right] =$  (Use the algebraic properties of natural logarithms to simplify first)