

MTH 1126 - Test #1 - 11 am Class

SPRING 2024

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Name _____

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

1. Compute: $\frac{d}{dx} \left[e^{\sec(5x^3)} \right] =$

2. Compute: $\frac{d}{dx} \left[\ln \left(\sqrt{\frac{\tan(x)}{4x^3+3x^2}} \right) \right] =$

3. Compute: $\int e^{(3x^6+6x^4)} (3x^5 + 4x^3) dx =$

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

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

6. Compute: $\frac{d}{dx} [\arcsin(\tan(x))] =$

7. Compute: $\int \frac{1}{x\sqrt{4x^2-9}} dx =$

8. Compute: $\frac{d}{dx} [\cot^{-1}(e^x)] =$

9. Compute: $\int \frac{x^2}{5+9x^6} dx =$

10. $z = \tan \left(\operatorname{arcsec} \left(\frac{3x}{2} \right) \right)$ Re-write this equation as an equivalent algebraic equation.

Extra: Wow! 10 points (All or nothing)

Compute: $\int \frac{1}{x\sqrt{16x^4-9}} dx =$