

MTH 1126 - Test #1 - 11 am Class

SPRING 2025

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Name _____

Show CLEARLY how you arrive at your answers

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

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

3. Compute: $\int e^{(8x^3+6x^2)} (8x^2 + 4x) \, dx =$

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

5. Compute: $\int \frac{2x^2+x+1}{(4x^3+3x^2+6x)} dx =$

6. Compute: $\frac{d}{dx} \left[\operatorname{arcsec} \left(e^{x^2} \right) \right] =$

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

8. Compute: $\frac{d}{dx} \left[\sin^{-1} (\cos (x)) \right] =$

9. Compute: $\int \frac{x}{9+16x^4} dx =$

10. $z = \cos(\operatorname{arcsec}(2x))$ Re-write this equation as an equivalent algebraic equation.

Extra: Wow! 10 points (All or nothing)

Compute: $\int \frac{1}{e^{-x}+e^x} dx =$