MTH 1126 - Test #1 - 9 am Class

Spring 2022

Pat Rossi Name _____

Show CLEARLY how you arrive at your answers

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

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

3. Compute: $\int e^{\left(7x^4+4x^3\right)}\left(7x^3+3x^2\right)\,dx =$

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

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

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

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

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

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

10. $z = \tan\left(\arccos\left(\frac{x-1}{2}\right)\right)$ Re-write this equation as an equivalent algebraic equation.

Extra: Wow! 10 points (All or nothing)

Compute: $\int \frac{\sin(x)\cos(x)}{\cos^2(x)-\sin^2(x)}dx =$