

MTH 1125 12pm Class - Test #4

FALL 2019

Pat Rossi

Name _____

Show CLEARLY how you arrive at your answers!

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

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

3. **Compute:** $\int (5 \cos(x) + \csc^2(x) - 6 \sec(x) \tan(x)) dx =$

4. **Compute:** $\int \sin(9x^2 + 16x + 4) (9x + 8) dx =$

5. **Compute:** $\int_0^1 (8x^3 + 6x^2 + 2) dx =$

6. **Compute:** $\int_0^1 (4x^3 + 2)^3 x^2 dx =$

7. **Compute:** $\int \frac{3 \cos(x) - 2 \sin(x)}{3 \sin(x) + 2 \cos(x)} dx =$

8. **Compute:** $\int \frac{3 \cos(x) - 2 \sin(x)}{\sqrt{3 \sin(x) + 2 \cos(x)}} dx =$

9. **Compute:** $\frac{d}{dx} [\ln (\sec (x) + \tan (x))] =$

10. **Compute:** $\frac{d}{dx} \left[\ln \left(\sqrt{\frac{x^2+1}{2x^3}} \right) \right] =$ (Use the algebraic properties of natural logarithms to simplify first)