

MTH 1125 2pm Class - Test #4

FALL 2021

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Name _____

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

1. **Compute:** $\int (24x^3 + 33x^2 - 14x + 7\sqrt{x} + 12) dx =$

2. **Compute:** $\int (12x^2 + 48x + 8)^4 (x + 2) dx =$

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

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

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

6. **Compute:** $\int_{-1}^1 (x^3 + 1)^3 x^2 dx =$ (The answer may not be a whole number)

7. **Compute:** $\frac{d}{dx} [\ln(6x^3 + 6x^2 - 2x)] =$

Extra! (Wow! - 5 pts. Can you believe it?) **Compute:** $\int \frac{3x+2}{9x^2+12x+15} dx =$

Extra! (Wow! - 5 pts. Can you believe it?) **Compute:** $\frac{d}{dx} \left[\ln \left(\sqrt{\frac{6x^4 - 4x^2 + 2}{8x^3 - 8x}} \right) \right] =$