

Math 251: Pledged Set 12

Due: November 25, 2008

This is a pledged set. Therefore, no outside help from book, calculator, or other people.

1. Explain exactly what is meant by the statement that “differentiation and integration are inverse processes.”

2. Evaluate

$$\int_0^1 (1 + u^4 - u^{-2}) \, du$$

3. Find the general indefinite integral of

$$\int x^{-1} \, dx$$

4. Calculate

$$\int_1^9 \frac{3x - 2}{\sqrt{x}} \, dx$$

5. Evaluate

$$\int \frac{\sin(\ln x)}{x} \, dx$$