SECTION: ______

Midterm 2
Math 31B, Section 3, Spring 2014
May 21, 2014

NAME/ID: ____________________________________________________

I have read and understood the Student Honor Code, and this exam reflects my unwavering commitment to the principles of academic integrity and honesty expressed therein.

SCORES:

1. ____________/20
2. ____________/20
3. ____________/20
4. ____________/20
5. ____________/20

Total: ____________/100

TO RECEIVE FULL CREDIT, PLEASE SHOW ALL WORK.
Problem 1 (20 points) Show that \( |(1.1)^{1/3} - T_5(0.1)| < 10^{-4} \).
Problem 2 (20 points)

\[ \int \frac{x^2 + x - 2}{x^2 - 2x - 3} \, dx. \]
Problem 3 (20 points) Does

\[ \int_{4}^{\infty} \frac{1}{\ln(x-1)^{2x}} \, dx \]

converge? Show all work.
Problem 4 (20 points) Show that

$$\lim_{n \to \infty} \frac{(-1)^n}{\sqrt{n}} = 0.$$
Problem 5 (20 points)

\[ \int \frac{\sqrt{1 - x^4}}{x^3} \, dx. \]