Homework 7

This homework is due in class on Monday 11/23/09

1 Course material

Power functions and properties of exponents:

- Textbook Appendix B3: 22, 26, 27, 28, 32, 50, 57, 58, 70, 74
- Textbook Section 5.1: 4, 6, 8, 10
- Find the inverse of the following functions: $f(x) = 3x^{-2/3}$, $g(x) = \frac{x^4}{81}$, $h(x) = 2(x+1)^{2\pi}$

Basic properties of exponential functions:

- Textbook Section 5.1: 20, 22, 26, 32
- Simplify: $\frac{2^{x-1}}{4^{x+2}}$, $\frac{3^{2x-1}}{27^{3-x}}$, $\frac{(5^{2x-1})^{1/2}}{625^x}$

Basic properties of logarithmic functions:

- Textbook Section 5.3: 18, 22, 23
- Textbook Section 5.4: 2, 4, 10, 12, 16
- Textbook Section 5.4 (see answers to problem 23 for example): 20(a), 22(a), 24(a)

The natural exponential and logarithm:

- Textbook Section 5.2: 12, 14, 16, 18, 57,
- Show that $\cosh^2(x) - \sinh^2(x) = 1$
- Textbook Section 5.4: 40 (simplify as much as possible)

2 Applied Problems

Textbook problems 55 and 56 page 344. If you do not have a graphing calculator, please come to office hours where we can lend you one.