# Math 222 In class assignment 1: Inverse Functions & The Natural Logarithmic Functions

**Name:**_____

**September 16, 2014**

**Directions:** Work in groups to complete the following problems.

1. Solve the equation for $x$.
   (a) $e^{2x} - 3e^x + 2 = 0$
   (b) $\ln(x^2 - 1) = 2 + \ln(x + 1)$
2. Differentiate $f(x) = x^{\sqrt{x}}$
3. Evaluate $\int \frac{1}{\sqrt{25-x^2}}$
4. Evaluate $\int \frac{2^x}{2^x+1} dx$
5. Evaluate $\tan(\arcsin(\frac{\sqrt{3}}{2}))$
6. Evaluate $\int_0^{\frac{\pi}{2}} \frac{\sin(x)}{1+\cos^2(x)} dx$
7. Find the derivative $f(x) = \sinh(\cosh(x))$
8. Evaluate $\int \tanh(x) dx$