

Name: \_\_\_\_\_

**Math 124 Worksheet #2**  
**October 2, 2007**

1. For what values is  $\ln(\tan^2 x) + 2x^5$  continuous?
2. Consider the domain of the function in the limits and evaluate the limits.

(a)  $\lim_{n \rightarrow 3} \sqrt{2^n - 1}$

(b)  $\lim_{t \rightarrow 1^-} [1 + \arcsin t]$

(c)  $\lim_{\theta \rightarrow \pi/2^-} \sec \theta$

(d)  $\lim_{x \rightarrow \infty} \frac{8}{x^3 - 1}$

3. For what value of  $c$  is the function below continuous at  $x = 0$ ?

$$f(x) = \begin{cases} ce^{x^2-x} & \text{if } x \leq 0 \\ 2x^2 + 1 + 2c & \text{if } x > 0 \end{cases}$$