**Math 101\_Homework# 1 : Functions**

**Problem 1:** Simplify: (a)  (b) 

**Problem 2:** If  and 

 Find a formula for ** simplifying your answer as far as possible.

**Problem 3:**  Use the definition of a logarithm to evaluate each of the following.

 a) log88 = \_\_\_\_\_ b) log644 = \_\_\_\_\_ c) log1 = \_\_\_\_\_ d) $ln e^{3}$ = \_\_\_\_\_

**Problem 4:** Find the domain of the following functions:

1. $f\left(x\right)=\sqrt{2x-1}$
2. $f\left(x\right)=\frac{x-2}{x^{3}-3x}$

**Problem 5:** Select all of the following graphs which are **one-to-one functions**.

a b c 

**Problem 6:** Find the inverse of the following functions:

1.  2. 

**Problem 7: If** $f\left(x\right)=2x-2, g\left(x\right)=x^{2}+4x-3$. Find:

1. $g(-2)$.
2. $f\left(g(x\right))$
3. $2f\left(-2\right)-3g(1)$.