

September 3, 2002

Show all work for credit.

Leave all answers as exact answers unless otherwise stated.

1. Solve for  $x$ ;  $e^{2x} = 4(10^{3x})$

2. For  $\sin \theta = \frac{1}{2}$  and  $0 < \theta < \frac{\pi}{2}$  find the following:

(a)  $\cos \theta =$

(b)  $\csc \theta =$

(c)  $\tan \theta =$

(d)  $\theta =$

3. Find solutions for the following:

(a)  $3x^2 - 2x = 7$

(b)  $e^{3x - 4} = 2$

4. "Simplify"  $(f(f(x)))$ ; where  $f(x) = \frac{x+1}{x-1}$ , and  $x \neq 1$ .