Math 120F Name _____

December 4, 1997

Quiz #9 (20 points)

TA section (Circle one): FA FB FC FD

Instructions: You have 35 minutes total for Quiz #9. You **MUST** show work for credit. If in doubt, ask for clarification.

---

1. (2 pts.) Solve for x: $2^{3x-1} = 5$.

2. (2 pts.) Solve for x: $\log_{10}(\ln(x)) = 3$.

3. (2 pts.) Solve for x: $\ln(x^2 - 1) = 2\ln(x)$.

4. (4 pts.) Start with the function $y = 3(0.345)^{t+1}$ and put it in the form $y = Ae^{at}$ for some A, a.

Problem (10 pts.) You have \$1000 to invest. You put \$800 in a bank account in 1990. At the same time, you put \$200 into stock fund.

(a) (5 pts.) In 1993, you had \$1200 in the bank account and in 1996 you had \$1400 in the bank account. Find a formula for $b(t)$=account balance in the year 1990+t.

(b) (1 pts.) Assume the value of the stock fund grows according to continuous compounding with an interest rate of 11%. Find a formula for $s(t)$ = stock fund balance in the year 1990+t.

(c) (4 pts.) When will the value of the stock fund equal the value of the bank account? What is the value when the value of the stock fund equal the value of the bank account?