ÇANKAYA UNIVERSITY
DEPARTMENT OF MATHEMATICS
December 23, 2004

Math 109
Business Mathematics
Midterm 2

Duration: 80 min.
Show all your work.

1. (20 pts.) Find the total amount due on a loan of $500 at 12% simple interest at the end of 30 months.

2. (20 pts.) If $1000 is invested at 6% compounded
(A) annually (B) semiannually (C) quarterly (D) monthly
what is the amount after 8 years? Write answers to the nearest cent.

3. (20 pts.) What is the effective rate of money invested at 6% compounded quarterly?

4. (20 pts.)What is the value of an annuity at the end of 10 years if $1000 is deposited every 6 months into an account earning 8% compounded semiannually? How much of this value is interest?

5.(15 pts.) If you sell your car to someone fo $2,400and agree to finance it at 1% per month on the unpaid balance, how much should you receive each month to amortize the loan in 24 months? How much interest will you receive?

6.(15 pts.) Let $f(x) = 3x^4 - 6x^2 - 7$.
(A) Find $f'(x)$.
(B) Find the equation of the tangent line at $x = 1$.
(C) Find the values of x where the tangent line is horizontal.