Prob. 4

A debt of \$7000 due in five years is to be repaid by a payment of \$3000 now and a second payment at the end of five years. How much should the second payment be if the interest rate is 8% coumpounded monthly?

Prob. 5

Minimize $Z = 2x_1 + x_2 + x_3$, subject to

$$\begin{cases} 2x_1 - x_2 - x_3 \leq 2 \\ -x_1 - x_2 + 2x_3 \geq 4 \\ x_1, x_2, x_3 \geq 0. \end{cases}$$

Prob. 6

Suppose that a fraternity is named by three Greek letters. (There are 24 letters in the Greek alphabet).

(a) How many names are possible?

(b) How many names are possible if no letter can be used more than one time?

Prob. 7

If the rate of inflation for certain goods is $7\frac{1}{4}\%$ compounded daily, how many years will it take for the average price of such a good to double?

Prob.8

(a) Find the future value of the (ordinary) annuity: \$600 per quarter for four years at the rate of 8% compounded quarterly.

(b) Find the future value of the annuity due: \$600 every quarter for $7\frac{1}{2}$ years at the rate of 10% compounded quarterly.