[10] **3.** For $f(x) = -166x + 58$ and $g(x) = 6(0.5)^x$, find the following:

(A) $\sum_{k=0}^{49} f(k) = f(0) + f(1) + f(2) + \cdots + f(49)$

(B) $\sum_{h=1}^{30} g(h) = g(1) + g(1) + g(2) + \cdots + g(30)$

[10] **4.** Sandra, a 25−year old professional, puts \$750 in a retirement fund at the end of each quarter until her reaches age 60. The account pays 8% interest compounded quarterly.

(A) How much will be in the account when Sandra is 60?

(B) If Mary makes no further deposits after age 60, how much will she have for retirement at age 65?

[10] **5.** A person purchased a \$200,000 home 20 years ago by paying 20% down and signing a 30−year mortgage at 13.2% compounded monthly.

(A) Find the monthly payment? How much interest was paid during the first 20 years?

(B) The owner wants to refinance the home for interest rates have dropped. Now the owner refinance the unpaid balance by signing a new 10−year mortgage at 8.2% compounded monthly. How much interest will refinancing save?

[10] **6.** Solve by using Gauss-Jordan Elimination:

$$3x_1 + 5x_2 - x_3 = -7$$

$$x_1 + x_2 + x_3 = -1$$

$$2x_1 + 11x_3 = 7$$

No other method of solving these systems of equations will be accepted!