Chapter 10
Group/Class Work

Ex 1.) Consider a population that grows according to the linear growth model. The initial population is $P_0 = 8$, and the population in the 10th generation is $P_{10} = 38$.

Remember the formula for linear growth is $\boxed{P_N = P_0 + N \times d}$

a.) Find the common difference d.

b.) Find P_{50} .

c.) Give an explicit description of the population sequence.

GW 1.) Consider a population that grows according to the linear growth model. The initial population is $P_0 = 7$, and the population in the 15th generation is $P_{15} = 67$.

a.) Find the common difference d.

b.) Find P_{100} .

c.) Give an explicit description of the population sequence.

EX 2.) Remember the arithmetic sum formula is

$$\boxed{A_0 + A_1 + A_2 + \ldots + A_{N-1} = \frac{(A_0 + A_{N-1}) \times N}{2}}$$

a.) Find $2 + 7 + 12 + \ldots + 497$.
(How many terms?)

b.) Find $3 + 7 + 11 + \ldots +$ _____, if there are exactly 50 terms.
(What is the last term?)

GW 2.)

a.) Find 1 + 3 + 5 + ... + 399.
(How many terms?)

b.) Find 10 + 15 + 20 + ... + _____, if there are exactly 100 terms.
(What is the last term?)

EX 3.) Remember the Annual Compounding Formula is $P_N = P_0 \times (1 + i)^N$, where N is the year and i is the annual interest rate.

Suppose you deposit $1237.50 in a savings account that pays 8.25% annual interest, with interest credited to the account at the end of each year. Assuming that no withdrawals are made, how much money will be in the account after 3 years?

GW 3.) Suppose you deposit $2,500.00 in a savings account that pays 6.25% annual interest, with interest credited to the account at the end of each year. Assuming that no withdrawals are made, how much money will be in the account after 5 years?

EX/GW 4.) Remember the General Compounding Formula is $P_N = P_0 \times (1 + i/k)^{N \times k}$, where N is the year, i is the annual interest rate, and k is the number of compounding periods per year.

Complete the following table:

Annual Interest Rate	Compounded	Annual Yield
9.5%	Yearly	9.5%
9.5%	Semiannually	
9.5%	Quarterly	
9.5%	Monthly	
9.5%	Daily	
9.5%	Hourly	
9.5%	Semihourly	