

Chapter 10  
Group Work

- 1.)
  - a.) Find  $16 + 20 + 24 + \dots + 52$  (10 terms)
  - b.) Find  $3 + 13 + 23 + \dots + 193$  ( ? terms)
- 2.) A population grows according to the linear growth model. The starting population is  $P_0 = 100$ , and the common difference is  $d = 12$ .
  - a.) Find  $P_1$
  - b.) Find  $P_5$
  - c.) How many generations will it take for the population to exceed 200?
- 3.) A population grows according to the exponential growth model. The starting population is  $P_0 = 1,000$ , and the common ratio is  $r = 1.3$ . If the generations happen twice a year, what is the size of the population after 10 years? (Hint:  $N$  is not 10.)

What if the generations happened every other month? Then what would the population size be after 10 years?

- 4.) You have \$1000 that you wish to deposit for 10 years.  
Bank A offers you a 10% interest rate compounded annually.  
Bank B offers you a 9.75% interest rate compounded monthly.  
Bank C offers you a 2% interest rate compounded annually, AND a free frisbee.

Which bank will you choose? Why?

5.) All of the populations below grow according to the logistic growth model. For each of them, find  $p_1$  up to  $p_8$ , and give a prediction of what will happen to the population in the future.

a.)  $p_0 = 0.56, r = 3.3$

b.)  $p_0 = 0.35, r = 1.9$

c.)  $p_0 = 0.4, r = 0.75$