**Pre-Calculus 11: Chapter 8 Practice Test**

1. Write the first 4 terms of each arithmetic sequence for the given values of a and d.  
   (a) a = -1, d = -4  
     
   (b) a = 1.25, d = -0.25
2. Find the missing terms in the following sequences:  
   (a) \_\_\_, \_\_\_, 3,   
     
   (b) \_\_\_, 4, \_\_\_, \_\_\_, 10
3. Determine the position of the given terms to complete the following statements:  
   (a) 170 is the \_\_\_th term of -4, 2, 8, …  
     
   (b) -10 is the \_\_\_th term of 14, 12.5, 11, …
4. Determine the second and third terms of an arithmetic sequence if the first term is 42 and the fourth term is 27
5. The terms 5x + 2, 7x – 4, and 10x + 6 are consecutive terms of an arithmetic sequence. Determine the value of x and state the three values.
6. Consider the sequence 28, 35, 42, …  
   Are the following numbers terms in this sequence?  
   (a) 378  
     
   (b) 575
7. Determine the sum of each arithmetic series:  
   (a) 5 + 8 + 11 + … + 53  
     
   (b) 8 + 3 – 2 - … - 102
8. Find the indicated sums:  
   (a)  (find S7)  
     
   (b) -3.5 – 1.25 + 1 + … (find S6)
9. Determine the sum, Sn, for each arithmetic sequence:  
   (a) a = -12, t10 = 51  
     
   (b) a = 42, d = -5, n = 14
10. Determine the value of a if d = -3, Sn = 279, n = 18
11. Determine the value of n if a = 8, tn = 68, Sn = 608
12. Find S10 for -10 – 14 – 18 – …
13. Determine the first four terms of each geometric sequence:  
    (a) a = -3, r = -4  
      
    (b) a = 2, r = 0.5
14. Determine t2, t3, and t4 in a geometric sequence in which a = 8.1 and t5 = 240.1
15. The 20th term of a geometric sequence is 524288 and the 14th term is 8192. What could be the value(s) of the third term?
16. Determine the sum, Sn, for each geometric sequence:  
    (a) 18 – 9 + 4.5 – … (find S12)  
      
    (b) 0.3 + 0.003 + 0.00003 + … (find S12)
17. Determine the sum, Sn, for each geometric sequence. Express your answers as fractions:  
    (a) a = 12, r = 2, n = 10  
      
    (b) a = 27, r = , n = 8
18. Determine the sum, Sn, for each geometric sequence.  
    (a) 27 + 9 + 3 + … +   
      
    (b) a = 5, tn = 81920, r = 4
19. The sum of 4 + 12 + 36 + 108 + … is 4372. How many terms are in the series?
20. Determine the sum of each infinite geometric series, if it exists:  
    (a) a = 3, r =   
      
    (b) 
21. Express each of the following as a lowest terms fraction:  
    (a)   
      
    (b) 