Discrete Math: **Sequences and Series Test; A**   Name: _____

Answer the following questions regarding sequences:

1. Write the type of sequence that starts: -11, -5, 1   1. _____

2. Write the type of sequence that starts: 27, 9, 3   2. _____

3. Write the d or r for the sequence: a^{-1}, a^0, a^1 3. _____

4. Find the 39th term in the sequence: 3.1, 2.7, 2.3   4. _____

5. Find the 13th term in the sequence: $-\sqrt{3}$, 3, $-3\sqrt{3}$ 5. _____

6. Write an equation for the sequence: -17, -11, -5   6. _____

7. Find the sum of the first 62 terms in the series -23, -21.5, -20, . . .? 7. _____

8. Find a_1 a sequence where $d = .5$ and $a_7 = -5$ 8. _____

9. Find d in a sequence where $a_1 = 23$ and $a_{13} = -1$ 9. _____

10. Find n in a sequence where $a_n = 82$, $a_1 = 118$, and $d = -3$ 10. _____

11. Find a_1 in a sequence where $a_{12} = 2/81$ and $r = 1/3$ 11. _____

12. Find r in a sequence where $a_8 = 45/8$ and $a_1 = 720$ 12. _____

13. Find n in a sequence where $a_n = 4{,}374$, $a_1 = -2$, and $r = -3$ 13. _____

14. Find the sum of the first 10 terms of the series -3, 12, -48, . . .   14. _____

15. Write the 3rd iterate for the function: $f(x) = x + 3$; $x_0 = -2$ 15. _____

16. Write the 2nd iterate for the function: $f(x) = 2x - 3i$; $x_0 = 2 - i$ 16. _____

17. Expand $(x - 1)^6$ 17. _____

18. Find the 105th term in the recursive function $a_n = 2n - 1$ 18. _____

19. Explain the Fibonacci Sequence: 19. _____

20. Explain Pascal's Triangle: 20. _____

21. Explain the perfect square sequence: 21. _____

22. Explain an example of a real-world sequence and write the formula   22. _____