DIRECTIONS: Give the common difference and supply the missing terms for each **arithmetic sequence**.

1. 3, 7, 11, 15, ___?___, ___?___

2. 21, 15, 9, 3, ___?___, ___?___

3. 7, 10, ___?___, 16, 19, ___?___

4. ___?___, ___?___, 25, 50, 75, 100

DIRECTIONS: Give the common ratio and supply the missing terms for each **geometric sequence**.

5. 3, 6, 12, 24, ___?___, ___?___

6. 1, -2, 4, -8, ___?___, ___?___

7. $\frac{1}{100}, \frac{1}{10}$, ___?___, 10, 100, ___?___

8. ___?___, ___?___, $\frac{1}{3}, \frac{1}{9}, \frac{1}{27}, \frac{1}{81}$

DIRECTIONS: Write the first four terms of the sequence with the given formula. Also write if the sequence is **arithmetic**, **geometric**, or **neither**.

9. $a_n = 1 - 2n$

10. $a_n = \frac{1}{n+1}$

11. $a_n = 3^n$

12. $a_n = n^2 - 1$

DIRECTIONS: Give the next two terms of each sequence by using the pattern in the differences between terms.

13. 8, 9, 11, 14, ___?___, ___?___

14. 5, 7, 11, 17, ___?___, ___?___

DIRECTIONS: Write if the sequence is **arithmetic**, **geometric**, or **neither**. Then supply the missing terms of the sequence.

15. 20, 17, 14, 11, ___?___, ___?___

16. 5, 9, 13, 17, ___?___, ___?___

17. 1, 5, 25, 125, ___?___, ___?___

18. 256, 64, 16, 4, ___?___, ___?___

19. 18, 22, 26, ___?___, 34, ___?___

20. 4, ___?___, −4, -8, −12, ___?___

DIRECTIONS: Write if the sequence is **arithmetic**, **geometric**, or **neither**. Then supply the missing terms of the sequence.

21. $1, \frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \_?\_, \_?\_$

22. 32, -16, 8, -4, _?_, _?_

23. $4^{1}/_{2}, 4^{3}/_{2}, 4^{5}/_{2}, 4^{7}/_{2}, \_?\_, \_?\_$

24. $\frac{1}{12}, \frac{2}{13}, \frac{3}{14}, \frac{4}{15}, \_?\_, \_?\_$

DIRECTIONS: Find the first four terms of the sequence with the given formula. Then write if the sequence is **arithmetic**, **geometric**, or **neither**.

25. $a_n = 4n + 3$

26. $a_n = 2n + 1$

27. $a_n = 3^{n+1}$

28. $a_n = 2 \bullet 3^n$

29. $a_n = \frac{(-2)^n}{8}$

30. $a_n = 13 - 4n$

31. $a_n = \log(n + 1)$

32. $a_n = \log 10^n$

DIRECTIONS: Find the next two terms of each sequence by using the pattern in the differences between terms.

34. 2, 4, 8, 14, 22, . . .

35. -3, 1, 9, 21, 37, . . .

36. 60, 48, 38, 30, 24, . . .

37. 24, 23, 21, 17, 9, . . .

38. 1, 3, 7, 15, 31, . . .

39. 0, 1, 4, 13, 40, . . .

40. 1, 2, 6, 15, 31, . . .

41. 1, 1, 2, 3, 5, 8, 13, . . .

(#41 is called the Fibonacci Sequence – each term is the sum of the two terms before it. This is one of the most famous sequences in all of mathetmatics!)