Unit 5.1 Arithmetic Sequences PRACTICE   **Period:** _____

Describe the pattern in each sequence. Then find the next two terms of the sequence.

1. $3, 6, 12, 24, \ldots$ 2. $9, 15, 21, 27, \ldots$ 3. $1.5, 2.25, 3, 3.75, \ldots$

4. $9.9, 8.8, 7.7, 6.6, \ldots$ 5. $1.5, 4.5, 13.5, 40.5, \ldots$ 6. $40, 20, 10, 5, \ldots$

7. $7, 11, 15, 19, \ldots$ 8. $67, 60, 53, 46, \ldots$ 9. $12, 7, 2, -3, \ldots$

Tell whether the sequence is arithmetic. If it is, identify the common difference.

10. $4, 8, 12, 16, \ldots$ 11. $-11, 5, 0, 6, \ldots$ 12. $4, 8, 16, 32, \ldots$

13. $12, 23, 34, 45, \ldots$ 14. $2, 4, 7, 9, \ldots$ 15. $1, 3, 9, 27, \ldots$

16. $-16, -11, -6, -1, \ldots$ 17. $-9, -4.5, -0.5, 4, \ldots$ 18. $-7, -14, -21, -28, \ldots$

19. $0, \frac{1}{3}, \frac{2}{3}, 1, \ldots$ 20. $5, 10, 15, 20, \ldots$ 21. $2, 20, 200, 2000, \ldots$

22.   You have a gift card for a coffee shop worth $90. Each day you use the card to get a coffee for $4.10. Write an explicit formula to represent the amount of money left on the card as an arithmetic sequence. What is the value of the card after buying 8 coffees?

Explicit Formula: _____   Value of card after buying 8 coffees: _____

23.   You start a savings account with $200 and save $30 each month. Write an explicit formula to represent the amount of money you invest into your savings account as an arithmetic sequence. How much money will you have invested after 12 months?

Explicit Formula: _____   Money after invested for 12 months: _____

Find the third, fifth, and tenth terms of the sequences described by each explicit formula.

24. $A(n) = 4 + (n + 1)(-5)$

25. $A(n) = 2 + (n + 1)(6)$

26. $A(n) = -5.5 + (n - 1)(2)$

27. $A(n) = 3 + (n - 1)(1.5)$

28. $A(n) = -2 + (n - 1)(5)$

29. $A(n) = 1.4 + (n - 1)(3)$

30. $A(n) = 9 + (n - 1)(8)$

31. $A(n) = 2.5 + (n - 1)(2.5)$

Tell whether each sequence is arithmetic. Justify your answer. If the sequence is arithmetic, write a recursive and an explicit formula to represent it.

32. $1.6, 0.8, 0, -0.8, \ldots$

33. $5, 10, 20, 40, \ldots$

Recursive Formula: _____

Recursive Formula: _____

Explicit Formula: _____

Explicit Formula: _____

34. $5, 13, 21, 29, \ldots$

35. $51, 47, 43, 39, \ldots$

Recursive Formula: _____

Recursive Formula: _____

Explicit Formula: _____

Explicit Formula: _____

36. $0.2, 0.5, 0.8, 1.1, \ldots$

37. $7, 14, 28, 56, \ldots$

Recursive Formula: _____

Recursive Formula: _____

Explicit Formula: _____

Explicit Formula: _____

38. **Error Analysis** Your friend writes A(8)=3+(8)(5) as an explicit formula for finding the eighth term of the arithmetic sequence 3, 8, 13, 18, ... Describe and correct your friend's error.