Number Patterns and Algebraic Rules

Name: _____ Date: _____

Part A: Continue the Pattern

Write the next three terms in each sequence.

1. 3, 7, 11, 15, _____, _____, _____
2. 20, 17, 14, 11, _____, _____, _____
3. 5, 12, 19, 26, _____, _____, _____
4. 50, 45, 40, 35, _____, _____, _____

Part B: Describe the Rule

Describe the rule for each pattern in words.

5. Pattern: 4, 9, 14, 19, 24...
   Rule: _____
6. Pattern: 100, 92, 84, 76, 68...
   Rule: _____

Part C: Find the nth Term

Find the algebraic rule for the nth term of each sequence.

7. Sequence: 5, 10, 15, 20, 25...
   nth term = _____
8. Sequence: 7, 9, 11, 13, 15...
   nth term = _____
9. Sequence: 1, 4, 7, 10, 13...
   nth term = _____
10. Sequence: 12, 22, 32, 42, 52...
    nth term = _____

Part D: Apply the Rule

Use the given rule to find the requested term.

11. If the nth term is 4n + 1, find the 10th term.
    Answer: _____

12. If the nth term is 6n - 2, find the 8th term.

    Answer: _____

13. If the nth term is 50 - 3n, find the 12th term.

    Answer: _____

Part E: Challenge Questions

14. A pattern starts at 8 and increases by 6 each time. What is the 20th term?

    Answer: _____

15. The nth term of a sequence is 2n + 5. Which term has a value of 35?

    Answer: The _____ term