

9-1**Practice**

Form G

Mathematical Patterns**Find the first six terms of each sequence.**

1. $a_n = -2n + 1$

3. $a_n = 2n^2 + 1$

5. $a_n = 2^n + 2$

7. $a_n = 4n + n^2$

9. $a_n = (-2)^n$

Write a recursive definition for each sequence.

11. 6, 5.7, 5.4, 5.1, 4.8, ...

13. 1, 3, 9, 27, ...

15. $\frac{2}{3}, 1, 1\frac{1}{3}, 1\frac{2}{3}, 2, \dots$

17. 36, 30, 24, 18, 12, ...

Write an explicit formula for each sequence. Find the twentieth term.

19. 7, 14, 21, 28, 35, ...

21. 5, 6, 7, 8, 9, ...

23. 3, 5, 7, 9, 11, ...

25. $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1, \frac{5}{4}, \dots$

27. $\frac{2}{3}, 1\frac{2}{3}, 2\frac{2}{3}, 3\frac{2}{3}, 4\frac{2}{3}, \dots$

Find the eighth term of each sequence.

29. 400, 200, 100, 50, 25, ...

31. 1, 2, 4, 8, 16, ...

33. 0.7, 0.8, 0.9, 1.0, 1.1, ...

35. $1\frac{1}{4}, 2\frac{1}{2}, 5, 10, 20, \dots$

37. A man swims 1.5 mi on Monday, 1.6 mi on Tuesday, 1.8 mi on Wednesday, 2.1 mi on Thursday, and 2.5 mi on Friday. If the pattern continues, how many miles will he swim on Saturday?

Determine whether each formula is *explicit* or *recursive*. Then find the first five terms of each sequence.

39. $a_n = n^2 - 6$

41. $a_n = \frac{1}{2}(n-1)$

43. $a_1 = -4, a_n = 2a_{n-1}$

45. **Writing** Explain how to find an explicit formula for a sequence.

47. The sum of the measures of the exterior angles of any polygon is 360° . All the angles have the same measure in a regular polygon.
- Find the measure of one exterior angle in a regular hexagon (six angles).
 - Write an explicit formula for the measure of one exterior angle in a regular polygon with n angles.
 - Why would this formula not be meaningful for $n = 1$ or $n = 2$?

49. **Writing** Explain the difference between a recursive and an explicit formula.