12-1

Practice

Arithmetic Sequences and Series

Find the next four terms in each arithmetic sequence.

1. $-1.1, 0.6, 2.3, \ldots$ **2.** $16, 13, 10, \ldots$ **3.** $p, p + 2, p + 4, \ldots$

For exercises 4–12, assume that each sequence or series is arithmetic.

4. Find the 24th term in the sequence for which $a_1 = -27$ and $d = 3$.

5. Find n for the sequence for which $a_n = 27$, $a_1 = -12$, and $d = 3$.

6. Find d for the sequence for which $a_1 = -12$ and $a_{23} = 32$.

7. What is the first term in the sequence for which $d = -3$ and $a_6 = 5$?

8. What is the first term in the sequence for which $d = -\frac{1}{3}$ and $a_7 = -3$?

9. Find the 6th term in the sequence $-3 + \sqrt{2}, 0, 3 - \sqrt{2}, \ldots$.

10. Find the 45th term in the sequence $-17, -11, -5, \ldots$.

11. Write a sequence that has three arithmetic means between 35 and 45.

12. Write a sequence that has two arithmetic means between -7 and 2.75.

13. Find the sum of the first 13 terms in the series $-5 + 1 + 7 + \cdots + 67$.

14. Find the sum of the first 62 terms in the series $-23 - 21.5 - 20 - \cdots$.

15. ***Auditorium Design*** Wakefield Auditorium has 26 rows, and the first row has 22 seats. The number of seats in each row increases by 4 as you move toward the back of the auditorium. What is the seating capacity of this auditorium?