Practice 5-7

Describing Number Patterns

Find the common difference of each arithmetic sequence.

1. $10, 16, 22, 28, \ldots$

2. $9, 6, 3, 0, \ldots$

3. $-12, -17, -22, -27, \ldots$

4. $-11, -8, -5, -2, \ldots$

5. $4, 4\frac{1}{2}, 5, 5\frac{1}{2}, \ldots$

6. $7\frac{1}{2}, 7, 6\frac{1}{2}, 6, \ldots$

7. $9, 10.5, 12, 13.5, \ldots$

8. $1, -1.5, -4, -6.5, \ldots$

9. $8, 9.1, 10.2, 11.3, \ldots$

10. $-9, -8.1, -7.2, -6.3, \ldots$

11. $-3, -0.6, 1.8, 4.2, \ldots$

12. $6.2, 4.5, 2.8, 1.1, \ldots$

Find the next two terms in each sequence.

13. $1, 7, 13, 19, \ldots$

14. $-8, -5, -2, 1, \ldots$

15. $1, -4, -9, -14, \ldots$

16. $\frac{1}{2}, -\frac{1}{2}, -\frac{3}{2}, -\frac{5}{2}, \ldots$

17. $2.7, 4, 5.3, 6.6, \ldots$

18. $9.8, 0.7, -8.4, -17.5, \ldots$

19. $6\frac{1}{3}, 4\frac{2}{3}, 3, 1\frac{1}{3}, \ldots$

20. $2\frac{1}{2}, \frac{3}{4}, -1, -2\frac{3}{4}, \ldots$

Find the fifth, tenth, and hundredth terms of each sequence.

21. $4, 14, 24, 34, \ldots$

22. $14, 6, -2, -10, \ldots$

23. $3, 10, 17, 24, \ldots$

24. $-19, -22, -25, -28, \ldots$

25. $\frac{1}{4}, -\frac{1}{4}, -\frac{3}{4}, -\frac{5}{4}, \ldots$

26. $-1.3, -0.3, 0.7, 1.7, \ldots$

27. $0, 101, 202, 303, \ldots$

28. $-1, -100, -199, -298, \ldots$

29. $5, 3.9, 2.8, 1.7, \ldots$

30. $-3\frac{1}{2}, -3\frac{3}{4}, -4, -4\frac{1}{4}, \ldots$

Determine whether each sequence is arithmetic. Justify your answer.

31. $0.5, 0.3, 0.1, -0.1, \ldots$

32. $-1, 1, -1, 1, \ldots$

33. $3, 6, 12, 24, \ldots$

34. $100, 81, 64, 49, \ldots$

35. Renting a backhoe costs a flat fee of \$65 plus an additional \$35 per hour.

a. Write the first four terms of a sequence that represents the total cost of renting the backhoe for 1, 2, 3, and 4 hours.

b. What is the common difference?

c. What are the 5th, 24th, 48th, and 72nd terms in the sequence?