

# Practice 5-6

## Describing Number Patterns

**Find the common difference of each arithmetic sequence.**

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| 1. 10, 16, 22, 28, ...                       | 2. 9, 6, 3, 0, ...                           |
| 3. -12, -17, -22, -27, ...                   | 4. -11, -8, -5, -2, ...                      |
| 5. $4, 4\frac{1}{2}, 5, 5\frac{1}{2}, \dots$ | 6. $7\frac{1}{2}, 7, 6\frac{1}{2}, 6, \dots$ |
| 7. 9, 10.5, 12, 13.5, ...                    | 8. 1, -1.5, -4, -6.5, ...                    |
| 9. 8, 9.1, 10.2, 11.3, ...                   | 10. -9, -8.1, -7.2, -6.3, ...                |
| 11. -3, -0.6, 1.8, 4.2, ...                  | 12. 6.2, 4.5, 2.8, 1.1, ...                  |

**Find the next two terms in each sequence.**

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| 13. 1, 7, 13, 19, ...                                    | 14. -8, -5, -2, 1, ...   |
| 15. 1, -4, -9, -14, ...                                  | 16. $\frac{1}{2}, -\frac{1}{2}, -\frac{3}{2}, -\frac{5}{2}, \dots$ |
| 17. 2.7, 4, 5.3, 6.6, ...                                | 18. 9.8, 0.7, -8.4, -17.5, ...                                     |
| 19. $6\frac{1}{3}, 4\frac{2}{3}, 3, 1\frac{1}{3}, \dots$ | 20. $2\frac{1}{2}, \frac{3}{4}, -1, -2\frac{3}{4}, \dots$          |

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

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| 21. 4, 14, 24, 34, ...   | 22. 14, 6, -2, -10, ...                                      |
| 23. 3, 10, 17, 24, ...   | 24. -19, -22, -25, -28, ...                                  |
| 25. $\frac{1}{4}, -\frac{1}{4}, -\frac{3}{4}, -\frac{5}{4}, \dots$ | 26. -1.3, -0.3, 0.7, 1.7, ...                                |
| 27. 0, 101, 202, 303, ...  | 28. -1, -100, -199, -298, ...                                |
| 29. 5, 3.9, 2.8, 1.7, ...  | 30. $-3\frac{1}{2}, -3\frac{3}{4}, -4, -4\frac{1}{4}, \dots$ |

**Determine whether each sequence is arithmetic. Justify your answer.**

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|------------------------------|--------------------------|
| 31. 0.5, 0.3, 0.1, -0.1, ... | 32. -1, 1, -1, 1, ...    |
| 33. 3, 6, 12, 24, ...        | 34. 100, 81, 64, 49, ... |
35. Renting a backhoe costs a flat fee of \$65 plus an additional \$35 per hour.
- Write the first four terms of a sequence that represents the total cost of renting the backhoe for 1, 2, 3, and 4 hours.
  - What is the common difference?
  - What are the 5th, 24th, 48th, and 72nd terms in the sequence?

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