

## 9-3

## Practice

Form G

## Geometric Sequences

Determine whether each sequence is geometric. If so, find the common ratio.

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|------------------------|-----------------------------|-------------------------|
| 1. 3, 9, 27, 81, ...   | 2. 4, 8, 16, 32, ...        | 3. 4, 8, 12, 16, ...    |
| 4. 4, -8, 16, -32, ... | 5. 1, 0.5, 0.25, 0.125, ... | 6. 100, 30, 9, 2.7, ... |
| 7. -5, 0, 5, 10, ...   | 8. 64, -32, 16, -8, ...     | 9. 1, 4, 9, 16, ...     |

Find the tenth term of each geometric sequence.

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|---|------------------------|--|
| 10. 2, 4, 8, ...                                    | 11. 1, 3, 9, ...       | 12. -2, 6, -18, ...                      |
| 13. -3, 9, -27, ...                                 | 14. -3, -12, -48, ...  | 15. -5, 25, -125, ...                    |
| 16. $\frac{1}{3}, \frac{1}{9}, \frac{1}{27}, \dots$ | 17. 0.3, 0.6, 1.2, ... | 18. $\frac{1}{4}, \frac{1}{2}, 1, \dots$ |

19. When a pendulum swings freely, the length of its arc decreases geometrically.

Find each missing arc length.

- 20th arc is 20 in.; 22nd arc is 18.5 in.
- 8th arc is 27 mm; 10th arc is 3 mm
- 5th arc is 25 cm; 7th arc is 1 cm
- 100th arc is 18 ft; 98th arc is 2 ft

Find the missing term of each geometric sequence. It could be the geometric mean or its opposite.

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|---------------------|-------------------------------|------------------------|
| 20. 4, ■, 16, ...   | 21. 9, ■, 16, ...             | 22. 2, ■, 8, ...       |
| 23. 3, ■, 12, ...   | 24. 2, ■, 50, ...             | 25. 4, ■, 5.76, ...    |
| 26. 625, ■, 25, ... | 27. $\frac{1}{3}$ , ■, 3, ... | 28. 0.5, ■, 0.125, ... |

29. **Writing** Explain how you know that the sequence 400, 200, 100, 50 is geometric.

30. **Open-Ended** Write a geometric sequence of at least seven terms.

31. **Error Analysis** A student says that the geometric sequence 30, \_\_, 120 can be completed with 90. Is she correct? Explain.