

Name:

Date:

Period:

Find the next three terms in each sequence:

1. 1, -3, 9, -27, 81, ...

3. 0, 3, 8, 15, 24, ...

5. $5, \frac{5}{2}, \frac{5}{4}, \frac{5}{8}, \frac{5}{16}, \dots$

7. What is the common difference in the sequence 8, 4, 0, -4, ...?

9. Write a function for the n th term of the arithmetic sequence, 15, 20, 25, 30, ...

11. Find the eighth term of the arithmetic sequence for which $a_1 = 21$ and $d = 9$.

13. A sequence is recursively defined as:
 $a_1 = 3$ and $a_n = a_{n-1} + n$

Write the first four terms of this sequence. Is this sequence arithmetic, geometric, or neither? Justify your answer.

2. 9, 109, 209, 309, 409, ...

4. 4, 16, 36, 64, 100, ...

6. 14, 34, 54, 74, 94, ...

8. What is the common ratio in the sequence 12, 6, 3, 1.5, ...?

10. Write a function for the n th term of the geometric sequence, -1, 2, -4, 8, ...

12. Find the seventh term of the geometric sequence for which $a = 6$ and $r = -\frac{1}{2}$.

14. The first four terms in a sequence are
40, 8, 24, 16, ...

Each term after the first two terms is found by taking one-half the sum of the two preceding terms.

Write a recursive definition for this sequence.