

Name:

Date:

Period:

Show appropriate work on a separate piece of paper.

Find the first four terms of each sequence defined by the recursive or explicit formula.

1.  $a_n = n^2 - 1$

2.  $a_1 = 2$   
 $a_n = 3a_{n-1}$

3.  $a_1 = 1$   
 $a_n = 2a_{n-1} + 3$

4.  $a_n = 3(2)^{n-1}$

Determine whether the sequence is arithmetic, geometric, or neither.

5. 2, 5, 9, 14, 20, ...

6. -5, -2, 1, 4, 7, ...

7. 3, 8, 13, 18, 23, ...

8. -3, 0, 6, 15, 27, ...

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

10. 1, 5, 6, 10, 11, ...

11. 1, 2, 3, 4, 5, ...

12. 7, 12, 17, 22, 27, ...

13. 1, 2, 4, 8, 16, ...

Find the next three terms in each sequence and write the explicit rule.

14. 1, 6, 11, 16, 21, ...

15. 4, 7, 10, 13, 16, ...

Find the indicated term.

16. 3<sup>rd</sup> term;  $a_n = 4n + 6$

17. 5<sup>th</sup> term;  $a_n = 3n - 1$

Write the explicit formula for the  $n$ th term of the arithmetic sequence with the given characteristics

18.  $a_{10} = 22, d = 3$

19.  $a_{21} = 147, d = 11$

20.  $a_8 = 21, a_{14} = 45$

21.  $a_5 = 27, a_{10} = 52$

Write the recursive rule for the arithmetic sequence with the given characteristics.

22.  $a_1 = -3, d = 8$

23.  $a_1 = 2, d = -2$

Find the indicated term given two terms in an arithmetic sequence.

24. 9<sup>th</sup> term;  $a_3 = 12$  and  $a_5 = 27$

25. 12<sup>th</sup> term;  $a_2 = 8$  and  $a_6 = 20$

Write the explicit formula for the  $n$ th term of each geometric sequence.

26. -3, -6, -12, -24, ...

27. 2, -6, 18, -54, ...

Write the recursive rule for the geometric sequence with the given characteristics.

28.  $a_1 = 4$  and  $r = 0.2$

29. 64, 16, 4, 1, ...