

Name: Key

Date: _____

Find the nth term for each sequence:

1. $a_1 = -5, d = 4, n = 9$

$$a_n = -5 + 4(n-1)$$

$$a_9 = 27$$

2. $a_1 = 13, d = -5/2, n = 29$

$$a_{29} = 13 - \frac{5}{2}(29-1)$$

$$a_{29} = -57$$

3. $a_1 = 3, r = -4, n = 6$

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

$$a_6 = -3072$$

4. $a_1 = -500, r = 1/2, n = 10$

$$a_{10} = -500\left(\frac{1}{2}\right)^{10}$$

$$a_{10} = -0.98$$

Complete each statement:5. 97 is the 26th term of -3, 1, 5, 9

$$a_n = -3 + 4(n-1)$$

6. -10 is the 17th term of 14, 12.5, 11, 9.5

$$a_n = 14 - 1.5(n-1)$$

Find the indicated term(s) in each sequence:7. a_{15} for -3, 3, 9, ...

$$a_{15} = -3 + 6(15-1) = 81$$

8. a_6 for 124, 62, 31, 15.5...

$$a_6 = 124\left(\frac{1}{2}\right)^{6-1} = 3.88$$

9. The first term is -7 and the common difference is 3. Find the next 3 terms.

$$a_n = -7 + 3(n-1)$$

$$-7, -4, -1$$

10. The first term is 6 and the common ratio is -4. Find the next 3 terms.

$$a_n = 6(-4)^{n-1}$$

$$6, -24, 96$$

11. The first term is 2500 and the common ratio is 1/5. Find the next 3 terms & the 10th term.

$$a_n = 2500\left(\frac{1}{5}\right)^{n-1}$$

$$2500, 500, 100, \quad a_{10} = 0.00128$$

12. The first term is -6 and the common difference is 5. Find the next 3 terms & the 100th term.

$$a_n = -6 + 5(n-1)$$

$$-6, -1, 4, \quad a_{100} = 489$$

13. Find the 43rd term of -124, -122, -120, ...

$$a_{43} = -124 + 2(43-1)$$

$$a_{43} = -40$$

14. Find the 38th term of 103, 99, 95, ...

$$a_{38} = 103 - 4(38-1)$$

$$a_{38} = -45$$

15. Find the 51st term of -167, -164, -161, ...

$$a_{51} = -167 + 3(51-1)$$

$$a_{51} = -17$$

16. Find the 29th term of 182, 176, 170, ...

$$a_{29} = 182 - 6(29-1)$$

$$a_{29} = 14$$

Write the rule for each sequence:

17. 5, 7, 9, 11, 13, ...

$$a_n = 2n + 3$$

18. -4, -8, -16, -32, -64, ...

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

19. 10, 15, 20, 25, ...

$$a_n = 5n + 5$$

20. -9, -2, 5, 12, 19, ...

$$a_n = 7n - 16$$

21. 2, 10, 50, 250, ...

$$a_n = 2(5)^{n-1}$$

22. 3, 7, 11, 15, 19, ...

$$a_n = 4n - 1$$

23. 1296, 432, 144, 48, 16, ...

$$a_n = 1296 \left(\frac{1}{3}\right)^{n-1}$$

24. 9, 11.5, 14, 16.5, ...

$$a_n = 2.5n + 6.5$$

25. -8, -3, 2, 7, 12, ...

$$a_n = 5n - 13$$

26. 3, -9, 27, -81, 243, ...

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