

Name _____
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Date _____
Algebra II

Recursive and Explicit Sequence Practice

Write an equation for each of the following sequences explicitly and recursively

1. 329.6, 376.8, 424, 471.2,...

2. 120, 192, 307.2, 491.52

3. 5400, 4050, 3037.5, 2278.125

4. 5205.20, 4208.15, 3211.1, 2214.05

5. 51024, 51669.27, 52314.54, 52959.81

6. 197.56, 217.32, 239.05, 262.96

Write each of the following equations recursively:

7. $f(n) = 16\left(\frac{1}{2}\right)^{n-1}$

8. $a_n = 8(2)^{n-1}$

9. $f(n) = 9 + (n-1)3$

10. $a_n = 4n - 3$

Write each of the following equations explicitly:

11. $a_n = -2a_{n-1}$
 $a_1 = 12$

12. $a_n = a_{n-1} - 7$
 $a_1 = -4$

13. $f(n) = f(n-1) + 4$
 $f(1) = -1$

14. $f(n) = -\frac{1}{2}f(n-1)$
 $f(1) = 12$

15. An arithmetic sequence has a 5th term of 19 and an 8th term of 28. Write an equation for the sequence.

16. In an arithmetic sequence, $a_4 = 19$ and $a_7 = 31$. Determine a formula for a_n , the n^{th} term of this sequence.

17. A geometric sequence has a 4th term of 4 and a 6th term of 36. Write an equation for the sequence.

18. In a geometric sequence, $a_4 = 12$ and $a_7 = 96$. Determine a formula for a_n , the n^{th} term of this sequence.

19. The first two terms in a sequence are 4 and 8.

- I. The common ratio is 2
- II. The common difference is 4

Which of the following is true?

- 1) Both I and II
- 2) Neither I or II
- 3) I only
- 4) II only

20. The eighth and tenth terms of a sequence are 64 and 100. If the sequence is either arithmetic or geometric, the ninth term cannot be

- 1) -82
- 2) -80
- 3) 80
- 4) 82

Write a recursive formula for the following sequences

21. 3, 8, 23, 68, ...

22. 100, 60, 40, 30, ...

23. While experimenting with her calculator, Candy creates the sequence 4, 9, 19, 39, 79,
Write a recursive formula for Candy's sequence. Determine the eighth term in Candy's sequence.