

Name:

Date:

Period:

Any time you see the notation  $a(n - 1)$  or  $a_{n-1}$ , circle the ENTIRE thing, and replace it with the words "PREVIOUS TERM".

For example:

The first term of a sequence is 4. What is the third term of the sequence with the recursive rule  $a(n) = 2(a(n - 1)) + 2$ ?

$$a(n) = 2(\text{Previous Term}) + 2$$

$$a(1) = 4$$

$$a(2) = 2(4) + 2 = 10$$

$$a(3) = 2(10) + 2 = 22$$

The third term is 22.

Practice Problems. Show all your work on a separate piece of paper.

1. Write a recursive function for the sequence:  
1, -2, -5, -8

3. Write a recursive rule for the sequence:  
2, 4, 7, 11, 16...

5. Find the third term of a sequence with the explicit rule  
 $f(n) = \frac{4 - n}{n + 3}$

7. What is the fifth term of the sequence defined by  
 $f(n) = 3(n - 3)$ ?

9. What is the 7<sup>th</sup> term in the sequence  $a_n = 2n - 4$ ?

2. Write a function that represents the sequence:  
7, 14, 21, 28, ...

4. Find the first 3 terms in the sequence  
 $a_n = 3(a_{n-1}) + 4$   
 $a_1 = 5$

6. Find the fifth term of a sequence represented by  
 $f(n) = 5n - 2$

8. What is the 5<sup>th</sup> term in the sequence:  $a_n = 3^n$ ?

10. The recursive rule for a sequence is  $f(n) = \frac{f(n-1)}{2} + 5$ .  
The first term is 4. What is the third term?

11. Write the explicit and recursive formulas for the following sequence: 0, -3, -6, -9, ... Simplify your explicit formula.

Explicit

Recursive

12. Write the explicit and recursive formulas for the following sequence: 3, 8, 13, 18, ... Simplify your explicit formula.

Explicit

Recursive

13. Write the explicit and recursive formulas for the following sequence: 0.9, 0.5, 0.1, -0.3, ... Simplify your explicit formula.

Explicit

Recursive

14. Write the explicit and recursive formulas for the following sequence: 3.2, 3.5, 3.8, 4.1, ... Simplify your explicit formula.

Explicit

Recursive