Name: _____ Date: _____

Sequences Practice

(Fill in the formulas)	Explicit	Recursive
Arithmetic		
Geometric		

Determine if the given sequence is arithmetic, geometric, or neither.

1. 1, 3, 9, 27, …

2. 2, 5, 8, 10, …

3. 2, 4, 6, 8 …

4. 4, 7, 10, 13, …

Complete each statement:

8. 27 is the _____th term of:
-5, -1, 3, 7, …

9. -10 is the _____th term of:
14, 12.5, 11, 9.5, …

Write the rule for each geometric sequence and find the given term:

Sequence	Common Ratio (r)	Explicit Formula	Recursive Formula	Given Term (n^{th})
-4, -12, -36, -108 …				a_{10}=
160, 80, 40, 20, …				a_{12}=
2, 8, 32, 128, …				a_{14}=

Find the nth term for each geometric sequence. Round to 3 decimal places if necessary.

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

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

17. What are the first four terms in the sequence whose nth term is $a_n = (-2)^n + 1$

a. 3, 4, 5, 6

b. -1, 1, -1, 1

c. -1, 5, -7, 17

d. -2, 4, -8, 16

18. The 8th term of an arithmetic sequence is 36. If the common difference is 2, what is the first term in the sequence? (Hint: work backwards!!!)

a. 22

b. 24

c. 38

d. 64

19. Look at the sequence in this table. What function represents this sequence?

a	1	2	3	4	⋯
a_n	-1	1	3	5	⋯

a. arithmetic; $a_n = a_{n-1} + 1$

b. arithmetic; $a_n = a_{n-1} + 2$

c. geometric; $a_n = 2(a_{n-1})$

d. geometric; $a_n = 3(a_{n-1})$

20. Look at the sequence in this table. What function represents this sequence?

a	1	2	3	4	⋯
a_n	8	11	14	17	⋯

a. $a_n = n + 7$

b. $a_n = n + 9$

c. $a_n = 2n + 5$

d. $a_n = 3n + 5$