Algebra II Name _____

Sequence 4

Write the first 5 terms of the following sequences.

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

2. $t_1 = 10,\ t_n = .5t_{n-1}$

3. $t_1 = 2,\ t_n = (t_{n-1})^2 + 1$

4. $a_1 = 2,\ a_2 = 4,\ a_n = a_{n-1} - a_{n-2}$

Write the recursive rule for the following sequences.

5. $21, 14, 7, 0, \ldots.$

6. $4, -12, 36, -108, \ldots$

7. $44, 11, \frac{11}{4}, \frac{11}{16}, \frac{11}{64}, \ldots$

8. $1, 4, 5, 9, 14, \ldots.$

Write a recursive rule for the following sequences.

9. $a_n = -2 - 8n$

10. $t_n = -\frac{1}{2}\left(\frac{1}{4}\right)^{n-1}$

Write an explicit rule for the following sequences.

11. $a_1 = 3,\ a_n = a_{n-1} - 6$

12. $t_1 = -2,\ t_n = 3t_{n-1}$

13. You add chlorine to a swimming pool. You add 32 ounces of chlorine the first week and 16 ounces every week thereafter. Each week, 40% of the chlorine in the pool evaporates.

a. Write a recursive rule for the amount of chlorine in the pool at the start of the nth week.

b. Find the amount of chlorine in the pool at the start of the third week.

c. Describe what happens to the amount of chlorine in the pool over time.