

2.1 Change in Arithmetic and Geometric Sequences

AP Precalculus

Name: _____

CA #2

Find an equation that gives the n th term of each sequence. Use the initial value ($k = 0$) of the sequence in your equation.

1. $\{17, 19, 21, 23, \dots\}$

2. $\{24, 4, \frac{2}{3}, \frac{1}{9}, \dots\}$

3. $\{\frac{2}{7}, 2, 14, 98, \dots\}$

Find an equation that gives the n th term of each sequence. Instead of the initial value use the k th term of the sequence in your equation. k is given for each problem.

4. $\{50, 20, -10, -40, \dots\}$ $k = 2$

5. $\{2, 4, 8, 16, \dots\}$ $k = 1$

6. $\{32, 8, 2, \frac{1}{2}, \dots\}$ $k = 3$

Find the n th term of each sequence. Write an equation for each sequence before finding the n th term.

7. $\{4, -6, -16, -26, \dots\}$ What is the 42nd term?

8. $\{-46, -43, -40, -37, \dots\}$ What is the 65th term?

9. Which of the following equations could represent the sequence $\{100, 92, 84, 76, \dots\}$?

I. $f(n) = -8 + 100n$

II. $f(n) = 100 - 8n$

III. $f(n) = 108 - 8n$

IV. $f(n) = 92 - 8(n - 2)$

10. Which of the following equations could represent the sequence $\{1, 4, 16, 64, \dots\}$?

I. $f(n) = (4)^{n-1}$

II. $f(n) = \frac{1}{4}(4)^n$

III. $f(n) = (4)^n$

IV. $f(n) = 16(4)^{n-2}$

Answers to 2.1 CA #2

1. $a_n = 15 + 2n$	2. $g_n = 144\left(\frac{1}{6}\right)^n$	3. $g_n = \frac{2}{49}(7)^n$	4. $a_n = 20 - 30(n - 2)$	5. $g_n = 2(2)^{n-1}$
6. $g_n = 2\left(\frac{1}{4}\right)^{n-2}$	7. -406	8. 146	9. III and IV.	10. I and II.