

PreCalculus Quiz

Your Name: _____

- (1-6) a) List the first five terms of the sequence.
 b) Is it (A)rithmetic, (G)eometric, (N)either, or (B)oth?
 c) If arithmetic, indicate the common difference, d . If geometric, indicate the common ratio, r . If both, give both.

	list first five terms	(circle one)	d and/or r (if applicable)
1. $a_n = -3n$		A G N B	
2. $a_n = 4$		A G N B	
3. $a_n = n^3 - 1$		A G N B	
4. $a_n = 2\left(\frac{3}{2}\right)^{n+1}$		A G N B	
5. $a_n = \frac{a_{n-1}}{4}$ $a_1 = 64$		A G N B	
6. $a_n = 3a_{n-1} + n$ $a_1 = 2$		A G N B	

7. Find the 80th partial sum of the sequence whose n^{th} term is

$$a_n = -7 + 3(n - 1)$$

8. Find the 109th partial sum of the sequence whose nth term is

$$a_n = 8(-0.3)^{n-1}$$

9. Write an expression for the nth term of the sequence:

$$107, 78, 49, 20, \dots$$

10. The 20th term of an arithmetic sequence is 101, and the common difference is 3. Find a formula for the nth term.

11. Find the sum:

$$\sum_{k=0}^{59} 3\left(-\frac{8}{7}\right)^k$$

12. Find the sum of the infinite geometric series:

$$25 + 5 + 1 + 0.2 + \dots$$

13. A culture initially has 6000 bacteria, and its size increases by 14% every hour. How many bacteria are present at the end of 4 hours?

14. Use the Binomial Theorem to expand the expression $(2x + 3y)^7$.

15. Find the 17th term in the expansion of $(a + b)^{21}$

16. Find the term containing x^{16} in the expansion of $(1 - x^2)^{29}$