Name:_____

4.1 Sequence and Series Intro

Find the first four terms and the 100th term of the sequence

1. $a_n = n+1$

2. $a_n = \dfrac{1}{n+1}$

3. $a_n = \dfrac{(-1)^n}{n^2}$

4. $a_n = 1+(-1)^n$

5. $a_n = n^n$

Find the first five terms of the given recursively defined sequence

6. $a_n = 2(a_{n-1}-2) \quad and \quad a_1 = 3$

7. $a_n = 2a_{n-1}+1 \quad and \quad a_1 = 1$

8. $a_n = a_{n-1}+a_{n-2} \quad and \quad a_1 = 1, a_2 = 2$

Find the nth term of a sequence whose first several terms are given

9. $2, 4, 8, 16, \ldots$

10. $1, 4, 7, 10, \ldots$

11. $1, \dfrac{3}{4}, \dfrac{5}{9}, \dfrac{7}{16}, \dfrac{9}{25}, \ldots$

12. $0, 2, 0, 2, 0, 2, \ldots$

Find the first six partial sums S_1, S_2, S_3, S_4, S_5, S_6 of the sequence

13. $1, 3, 5, 7, \ldots$

Find the sum

14. $\sum_{k=1}^{4} k$

15. $\sum_{k=1}^{3} \frac{1}{k}$

16. $\sum_{i=1}^{8} [1 + (-1)^i]$

17. $\sum_{k=1}^{5} 2^{k-1}$

Write the sum using sigma notation

18. $1 + 2 + 3 + 4 + \ldots + 100$

19. $1^2 + 2^2 + 3^2 + \ldots + 10^2$

20. $\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \ldots + \frac{1}{999 \cdot 1000}$

21. $1 + x + x^2 + x^3 + \ldots + x^{100}$