**Find the first four terms and the eighth term of the sequence.**

1. {12-3n} 2. {$\frac{3n-2}{n^{2}+1}\}$ 3. {9}

4. {(-1)n-1$\frac{n+7}{2n}$} 5. {1+(-1)n+1} 6. {$\frac{2^{n}}{n^{2}+2}$}

7. an is the number of decimal places in (0.1)n.

**Graph the sequence.**

8. {$\frac{1}{\sqrt{n}}$} 9. {$\frac{1}{n}$} 10. {(-1)n+1n2}

  

**Find the first five terms of the recursively defined infinite sequence.**

11. a1 = 2, ak+1 = 3ak – 5 12. a1 = -3, ak+1 = ak2 13. a1 = 5, ak+1=kak

14. a1 = 128, ak+1= $\frac{1}{4}$ak 15. a1 = 3, ak+1 = 1/ak 16. a1 = 2, ak+1 = (ak)k

17. Find the first four terms of the sequence of partial sums for the given sequence {3 + $\frac{1}{2}n$}.

**Find the sum.**

18. $\sum\_{k=1}^{5}(2k-7)$ 19. $\sum\_{k=1}^{4}(k^{2}-5)$ 20. $\sum\_{k=3}^{6}\frac{k-5}{k-1}$

21. $\sum\_{k=1}^{5}(-3)^{k-1}$ 22. $\sum\_{k=1}^{1000}5$ 23. $\sum\_{k=253}^{571}\frac{1}{3}$ 24. $\sum\_{j=1}^{7}\frac{1}{2}k^{2}$

25. The number of bacteria in a certain culture is initially 500, and the culture doubles in size every day.

(a) Find the number of bacteria present after one day, two days, and three days.

(b) Find a formula for the number of bacteria present after n days.

26. The Fibonacci sequence is defined recursively by a1 = 1, a2 = 1, ak+1 = ak + ak-1 for k ≥ 2.

(a) Find the first ten terms of the sequence.