

1.  $a_n = 2 + (0.86)^n$

2.  $a_n = \left(1 + \frac{2}{n}\right)^n$

3.  $a_n = 2^{-n} \cos(n\pi)$

4.  $a_n = \frac{(-3)^n}{n!}$

5.  $a_n = \sqrt[n]{2^{1+3n}}$

6.  $a_n = \frac{3n \cdot n!}{(n+1)!}$

For the following determine whether the sequence is monotonic increasing, decreasing or neither. Also determine whether the sequence is bounded.

7.  $a_n = 2 + \frac{(-1)^n}{n}$

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

9.  $a_n = \frac{n^2}{n+1}$

10.  $a_1 = 3, a_{n+1} = \sqrt{a_n + 5}$

11.  $a_0 = 0, a_{n+1} = \frac{1}{2}a_n$

12.  $a_n = \frac{e^n}{n!}$