1. Determine whether the sequence
   \[ a_n = \frac{n + 3}{10n + 1}, \]
   converges or diverges. If it converges find its limit.

2. Determine whether the sequence
   \[ a_n = \frac{(-1)^n(3 + 5n^2)}{n + n^2}, \]
   converges or diverges. If it converges find its limit.

3. Determine whether the series is convergent, and if it is, find its sum.
   \[ \sum_{n=1}^{\infty} \frac{1 + 2^n}{3^n}, \]