

11.1 - Sequences

Calculus II

1. List the first 5 terms of each sequence.

a. $\frac{4n}{n^2-7}$ starting at $n=0$

b. $\frac{(-1)^{n+1}}{2n+(-3)^n}$ starting at $n=2$

2. Determine the rule for the sequence.

a. $\{4, -12, 36, -108, 324, \dots\}$

b. $\{2, 11, 20, 29, 38, \dots\}$

c. $\{15, 12, 9, 6, 3, \dots\}$

3. Determine whether the sequence converges or diverges. If it converges, find the limit.

a. $\lim_{n \rightarrow \infty} \frac{3n^2-1}{5n^2+4n}$

b. $\lim_{n \rightarrow \infty} (-1)^{n+1} \frac{2n}{n^2+1}$

c. $\lim_{n \rightarrow \infty} \frac{n^2-7n+3}{1+10n-4n^2}$

d. $\cos(n\pi)$