

(11.1) Sequences

Full Name: _____

Determine if each of the sequences converges or diverges. If a sequence converges, determine its limit.

1. $a_n = 4^{-n}$

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

3. $a_n = \left(\frac{n}{3n+1}\right)^n$

4. $a_n = 3^{\frac{n}{n^2+1}}$

5. $\left\{2, -\frac{4}{3}, \frac{8}{9}, -\frac{16}{27}, \frac{32}{81}, \dots\right\}$

6. $\{-4, 12, -36, 108, -324, \dots\}$