

Worksheet 3/14/2025

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

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

2. $a_n = 2\sqrt{n+4}$

3. $a_n = 2^n 5^{-n}$

4. $a_n = \frac{\sin n}{n}$

5. $a_n = \cos\left(\frac{n\pi}{n+1}\right)$

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

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

8. $a_n = \frac{\ln n}{n}$

9. $a_n = n^{1/n}$

10. $a_n = n^2 e^{-n}$