

Determine whether the following sequences converge or diverge. If a sequence converges, determine the limit.

1. 4 pts points  $a_n \stackrel{\text{def}}{=} \ln(n+1) - \ln n.$

2. 3 pts points  $a_n = \frac{\ln(n^2)}{n}$

3. 3 pts points  $a_n \stackrel{\text{def}}{=} \frac{2^n}{3^{n+1}}.$