

MATH 2730; a few exercises regarding the definition of the limit of a sequence. This is NOT an assignment.

In all of the problems you would need to first guess the limit of the sequence $\{a_n\}_{n=1}^{\infty}$, and then justify your guess using ONLY the definition of the limit of a sequence.

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

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

3. $a_n = \frac{1}{\ln(n+1)}$

4. $a_n = \frac{-1}{\sqrt{n}+1}$

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

6. $a_n = \frac{3}{5^{n-1}}$

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