

# Finding (50) Limits and Proving Convergence

Example 1  $\lim_{n \rightarrow \infty} \frac{1}{n^2} = 0$

Example 2  $\lim_{n \rightarrow \infty} \frac{3n+1}{7n-4} = ?$

Example 3  $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n = ?$

Example 4 Find  $\lim_{n \rightarrow \infty} (\sqrt{n+1} - \sqrt{n})$

Hw Suppose  $a_n \rightarrow a > 0$

Prove:  $\sqrt{a_n} \rightarrow \sqrt{a}$