

Extra Problems on Limits

1) Prove that $\lim_{n \rightarrow \infty} \frac{2n + 11}{n + 3} = 2$ using the definition of convergence.

2) Prove that $\lim_{n \rightarrow \infty} \sqrt{\frac{5n + 3}{n}} = \sqrt{5}$ using the definition of convergence.

3) Prove that $a_n = \frac{5}{\sqrt{n}} + 3$ converges using the definition of convergence.

4) Prove that $a_n = \frac{(-3)^n}{4^n + 7}$ converges using the definition of convergence.

(note that $(-3)^n = (-1)^n 3^n$)