

MATH 2058 - HW 2 - Questions

1 (P.61-62 Q5cd). Establish the following limits using the definition of limit.

a) $\lim_{n \rightarrow \infty} \frac{3n+1}{2n+5} = \frac{3}{2}$

b) $\lim_{n \rightarrow \infty} \frac{n^2-1}{2n^2+3} = \frac{1}{2}$

2 (P.61-62 Q9). Let (x_n) be a sequence such that $x_n \geq 0$ for all $n \in \mathbb{N}$. Suppose $\lim x_n = 0$. Show that $\lim \sqrt{x_n} = 0$