Example (1)

Check out *this* example!

Example (2)

Let $f : \mathbb{R}^2 \to \mathbb{R}$ be continuous.

Example (3)

Suppose that we have a series

$$\sum_{n=0}^{\infty} \left(\frac{a_n}{b_n} \right)^n < \infty,$$

where $\frac{a_n}{b_n} < 1$ for all n.

Example (4)

$|f(x_n) - f(x)| < \varepsilon,$ for all n such that $n \leq M$.

Example (5)

Suppose that $\{f_n\}$ are uniformly continuous functions which converge uniformly to f.

Example (6)

For every ε, there exists a δ...

Example (7)

$$\mathrm{Re}(z) = \frac{z + \overline{z}}{2}$$

Example (8)

Define $f : \mathbb{R}^3 \to \mathbb{R}$ by

$$f(\bar{\mathbf{x}}) = \bar{\mathbf{x}}^T A_\lambda \bar{\mathbf{x}}$$

where

$$A = \begin{bmatrix} 3-\lambda & 2 & 0 \\ -2 & 4-\lambda & 1 \\ -2 & 2 & 3-\lambda \end{bmatrix}, \lambda \in \mathbb{R}. \tag{1}$$

What happens when $\lambda = 2$ in Equation (1), and how does this affect f?

Example (9)

Show that $x^p \xrightarrow{x \to \infty} \infty$ for $p > \infty$.