



If $f : \Omega \rightarrow \mathbb{R}^m$ consider analysing its coordinate functions separately!

(*): useful **Proposition**: If $f \in C(\Omega) \cap C^1(\Omega \setminus \{a\})$ and if $L := \lim_{x \rightarrow a} Df(x)$ exists, then $Df(a) = L$ and $f \in C^1(\Omega)$. This usually avoids to calculate $Df(a)$ by hand.

Flowchart how to analyse differentiability in several variables quickly.