1 September 7th

1.1 Contraction Mapping Theorem

> **Example 1.1**
>
> Let U be convex and closed in $\mathbb{R}^n$, Let $f \in \mathbb{C}^1(U, \mathbb{R}^n)$ be s.t. $\|\frac{\partial f_i}{\partial x_i}\|$

1.2 Solving Nonlinear Equations

We want to solve $f(x) = 0$, where $f : \mathbb{R}^n \to \mathbb{R}^n$.