Exercises:

1. Prove the second equality in equation (41.1).
2. Prove corollary (41.6).
3. Prove that there is no injective continuous mapping from S^n into $\mathbb{R}^n$. ([11], p. 217)
4. Show that no proper subset of S^n can be homeomorphic to S^n. ([11], p. 217)
5. Let Ω be an open subset of $\mathbb{R}^n$ and $f : \Omega \longrightarrow \mathbb{R}^n$ be an injective continuous map. Show that f is a homeomorphism onto its image. ([11], p. 217)