Exercises

9.101 [OVB] Let $n \geq 1$ be natural. Let (X_i, d_i) be compact metric spaces, for $i = 1, \ldots n$; choose $y_{i,k} \in X_i$ for $i = 1, \ldots n$ and $k \in \mathbb{N}$. Show that there exists a subsequence k_h such that, for every fixed i, y_{i,k_h} converges, that is, the limit $\lim_{h\to\infty} y_{i,k_h}$ exists.