MAT 320. HW due Nov 7, 2018

Do problems 13.3, 13.4, 13.7, 13.11, 13.15 from the textbook.

Problem 1. Construct a compact set $E \subset \mathbb{R}$ such that ∂E is a countable infinite set.

Problem 2. Construct a distance function $d_?$ on $\mathbb{R}^2$ such that there exists an open set for $d_?$ which is not open for the usual distance function.

Problem 3. Does there exist a distance function d on $\mathbb{Z}$ such that $\mathbb{Z}$ is compact in this distance?