MAS242 ANALYSIS I QUIZ 1

Problem 1. *(15 points) Let S be a bounded infinite subset of $\mathbb{R}$.*
Prove that there exists a sequence of distinct points of S that converges to some point in $\mathbb{R}$

Problem 2. *(15 points) Prove or disprove following statements.*

(1) *Any bounded sequence which has unique limit point converges in the domain $\mathbb{R}$.*

(2) *There exists bounded convergent sequence which has two limit points in the domain $\mathbb{R}$.*

Date: 12 March 2021.