Homework set 4

October 5, 2017

1. Prove that if $A \subseteq \kappa$ is unbounded, the $\{\alpha \in A \cap \kappa | \alpha \text{is a limit point}\}$ is a club subset of κ, (κ regular).

2. Prove that is f is a normal function mapping κ to κ, then the range of f is a club subset of κ, (κ regular).

3. For the countable case of the Δ-lemma (see attachment called delta-lemma.pdf), the continuum hypothesis is assumed. Prove that the Δ-lemma fails in this case if we drop the continuum hypothesis.

4. Finish the proof of lemma 9.9 in Jech: prove that every weakly compact cardinal is a strong limit cardinal.

5. Finish the proof of lemma 9.26 (i): show that the branch we construct in the proof has cardinality $\aleph_1$.