MATH 330 – HW #27

Cristobal Forno

November 30, 2017

Proposition 13.7: A nonempty subset $\mathbb{N}$ is finite if and only if it is bounded above.

Proof: Suppose a finite, nonempty $A \subseteq \mathbb{N}$. Since it is finite, there exits a $\max(A)$ and this maximum is an upperbound for A.

Conversely, if A is bounded above by $b \in \mathbb{N}$, then $A \subseteq [b]$. So A is finite by Prop. 13.6.