$\begin{array}{c} {\rm MATH~131~Homework~6} \\ {\rm Jesse~Cai} \\ {\rm 304634445} \end{array}$ 

1. Prove  $\forall x \in \mathbb{R} :\in A = \left( \forall k \in \mathbb{N} : a_k := \left\{ n \in \mathbb{N} : |a_n - x| < \frac{1}{k+1} \right\} \right)$ 

2.