10. Consider $A_n = \left[\frac{n}{n+1}, 1 \right]$.

From Q9, we know that $A_{n+1} \subset A_n$ and $\frac{n}{n+1} \to 1$ as $n \to \infty$.

Hence $\bigcap_{n=1}^{\infty} A_n = \{1\}$.