1. Show that for any $A \in \mathcal{F}_1^\infty$ there exist sets $A_n \in \mathcal{F}_1^n$ such that $P(A \triangle A_n) \to 0$ as $n \to \infty$. 
2. Show that if $X$ is measurable with respect to the tail $\sigma$-field which is generated by a sequence of independent random variables, then there is a constant $c$ such that $P(X = c) = 1$. 