The Cantor Set and the Cantor Function- HW Problems

1. Let F be the generalized Cantor set, removing $\alpha(3^{-n})$, $0 < \alpha < 1$, at each stage (instead of middle thirds). Show that F is closed, and $m(F) = 1 - \alpha$. Also find A_2 when $\alpha = \dfrac{3}{5}$.

2. Show that there exists a strictly increasing, continuous function on the interval $[0,1]$ that maps a set of positive measure onto a set of measure 0.