Math 201B Winter 2018 Homework problem from January 12.

P1: Show that if $F : \mathbb{R} \to \mathbb{R}$ is right continuous and monotone increasing then there is an interval $I$ in $\mathbb{R}$ and a measurable map $f : I \to \mathbb{R}$ so that $\mu_F = f_*(\lambda_I)$.

(The Lebesgue Stieltjes measure $\mu_F$ on $\mathbb{R}$ equals the pushforward under $f$ of the Lebesgue measure on $I$.)