HW 6

1. Solve the non-Sturm-Lioville-boundary-value-problem $y'' + \lambda y = 0$ on $[0, \pi]$ where $y(0) = y(\pi)$ and $y'(0) = y'(\pi)$. ($\lambda \in \mathbb{R}$.)
2. Solve the SL BVP: $y'' + \lambda y = 0$ on $[0, \pi]$ with $y(0) = 0, y'(\pi) = 0$. ($\lambda \in \mathbb{R}$.)
3. Prove that in the SL BVP, having a C^2 solution u is equivalent to solving the Prüfer transformed system for C^1 functions, r, θ with $\tan(\theta(a))$ and $\tan(\theta(b))$ being given.