Math 151B Homework 5

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Q1

Q2

Q3 Since $y'' = p(x)y' + q(x)y \implies y'' - p(x)y' - q(x) = 0$, $y \equiv 0$ is a solution. Then by Corollary 11.2, the BVP $y'' = p(x)y' + q(x)y$, for $a \leq x \leq b$, with $y(a) = 0$ and $y(b) = 0$ has a unique solution, i.e. $y \equiv 0$ is the only solution. Therefore $y_2 \equiv 0$.

Q4