

to turn it into Sturm-Liouville form.

In summary,

Equation (6.1),

$$a_2(x)y'' + a_1(x)y' + a_0(x)y = f(x), \quad (6.7)$$

can be put into the Sturm-Liouville form

$$\frac{d}{dx} \left(p(x) \frac{dy}{dx} \right) + q(x)y = F(x), \quad (6.8)$$

where

$$\begin{aligned} p(x) &= e^{\int \frac{a_1(x)}{a_2(x)} dx}, \\ q(x) &= p(x) \frac{a_0(x)}{a_2(x)}, \\ F(x) &= p(x) \frac{f(x)}{a_2(x)}. \end{aligned} \quad (6.9)$$