


<p align="center"> Kingdom of Saudi Arabia Ministry of Higher Education KING SAUD UNIVERSITY <i>Deanship of Scientific Research</i> <i>College of Science Research Center</i> </p>		<p>جامعة الملك سعود</p>
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316 (1430-1429)

$\{ \Psi_n \}_{n \in \mathbb{N}}$:
 $L^2(a, b)$: $(f, g) \leq \|f\| \|g\|$: $f \in L^2(a, b)$: $f \in L^2(a, b)$: $(\Psi_n)_{n \in \mathbb{N}}$:

$(x - x^2)y'' - 2xy' + y = 0, \quad 0 < x < 1$:

$x_0 = 0$:
 $y'' + y' \sin x + (1 + x^2)y = 0$:

$\begin{cases} (e^x u')' + xu + \lambda u = 0 \\ u(1) = 0, \quad u(2) = 0 \end{cases}$:
 $\lambda \int_1^2 e^x (u')^2 dx = \int_1^2 (\lambda + x)u^2 dx$:

$\begin{cases} (xu')' + \frac{\lambda}{x}u = 0, \quad 1 < x < e \\ u(1) = 0, \quad u(e) = 0. \end{cases}$:
 $x^2(x + 2)y'' - xy' + (x + 1)y = 0, \quad x > 0$:
 $x = 0$: $x = 0$

