KFUPM – Department of Mathematics and Statistics – Term 133

MATH 260

QUIZ # 4 Code 1 (Duration = 20 minutes)

NAME:_____

ID:_____ Section: _____

Exercise 1 (5 points)

Let $y_1 = x$ and $y_2 = x^2$ be solutions of the homogeneous equations $x^2y''-2xy'+2y=0$. Solve the differential equation $x^2y''-2xy'+2y=x^5$.

Exercise 2 (5 points)

Find the eigenvalues and eigenvectors of the matrix $\begin{pmatrix} 1 & -1 & 1 \\ 0 & 0 & 0 \\ 1 & 2 & 1 \end{pmatrix}$

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QUIZ # 4 Code 2 (Duration = 20 minutes)

NAME:_____

ID:_____ Section: _____

Exercise 1 (5 points)

Find the eigenvalues and eigenvectors of the matrix $\begin{pmatrix} 1 & 0 & 1 \\ -1 & 0 & 2 \\ 1 & 0 & 1 \end{pmatrix}$

Exercise 2 (5 points)

Let $y_1 = x$ and $y_2 = x^2$ be solutions of the homogeneous equations $x^2y''-2xy'+2y = 0$.

Solve the differential equation $x^2y''-2xy'+2y = x^4$.