

M20580 L.A. and D.E. Tutorial
Quiz 8

1. The differential equation $\left(\frac{dy}{dx}\right)^2 + x^2y + x^3 - 5 = 0$ is (CIRCLE ONE)

- (a) First order linear (b) First order nonlinear (c) Second order linear
(d) Second order nonlinear (e) None of the above

2. Find the least-squares solution $\hat{\mathbf{x}}$ to $A\mathbf{x} = \mathbf{b}$ where $A = \begin{pmatrix} 1 & 1 \\ 0 & 1 \\ 1 & 0 \\ 1 & 1 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 7 \\ -2 \\ 3 \\ 5 \end{pmatrix}$