

LAWAL ADEOLA IBUOMENAN
MECHATRONICS
18/ENG05/029
ENGINEERING MATHS

$$1. \quad F := \begin{pmatrix} 1 & -2 & -1 & 3 \\ 2 & 3 & 0 & 1 \\ 1 & 0 & -4 & -2 \\ 0 & -1 & 3 & 1 \end{pmatrix}$$

$$G = \begin{pmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{pmatrix}$$

$$A := \begin{pmatrix} 10 \\ 8 \\ 3 \\ -7 \end{pmatrix}$$

$$G := F^{-1}A$$

$$G = \begin{pmatrix} -1 \\ 2 \\ -3 \\ 4 \end{pmatrix}$$

2. $t := 0, 0.1..10$

t =

0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
1.5

$$y(t) := \left(\sin(0.25t) + 2t + e^{-0.85t} \right) - 2 \cos\left(\frac{\pi}{10}\right) t$$

y(t) =

1
0.953
0.913
0.879
0.851
0.827
0.809
0.794
0.784
0.777
0.773
0.772
0.774
0.778
0.784
0.793

