

Student ID

Quiz 4

March 18, 2025

1. What is the property of sine and cosine functions that make them appropriate for the Fourier Series? (3 Marks)
2. Show that $\sin(t)$ and $\cos(t)$ are linearly independent. (3 Marks)

3. Using the expansion of the exponential function, calculate e^{At} where $A = \begin{bmatrix} 1 & 1 \\ 0 & 1 \end{bmatrix}$. (4 Marks)