

系別：工組三年級

科目：工程數學

本試題共 / 頁

1. Evaluate the line integral of $\vec{G}(x, y, z) = x\vec{i} - y\vec{j} + z\vec{k}$ over the straight line segment from $(1, 1, 1)$ to $(-2, 1, 3)$
(25%)
2. Find the general solution of $y'' + 4y = x + 2e^{-2x}$
(25%)
3. Find the eigenvalues and corresponding eigenvectors of the given matrix A
$$A = \begin{bmatrix} 1 & -2 \\ 2 & 0 \end{bmatrix}$$

(25%)
4. Find the inverse Laplace Transform of
$$\frac{4}{s^2 + 4s + 20}$$

(25%)