

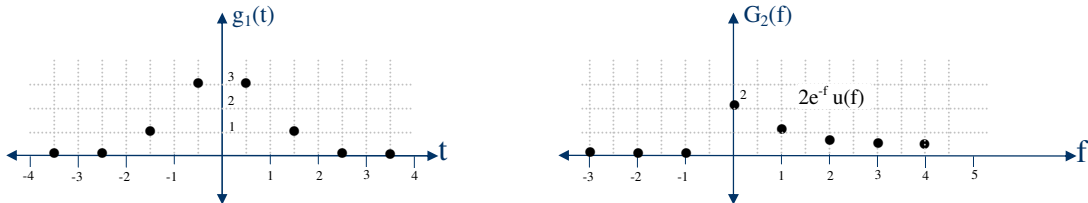


COLLEGE OF ENGINEERING & TECHNOLOGY

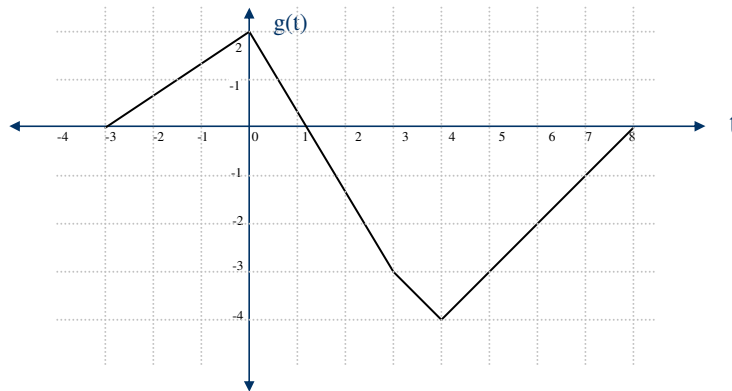
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Course : Spectral Analysis
Course Code : EC321

Sheet 6

1. Calculate the Discrete Fourier transform or Inverse DFT of the following discrete signals.



2. Find the Fourier Transform of the following signal using differentiation and delta function.



3. Evaluate the following integrals.

- $\int_{-\infty}^{\infty} (t^4 + t^2 + t + 1) \delta(t - 1) dt$
- $\int_{-\infty}^{\infty} \delta(t - 1) u(t - 4) dt$
- $\int_{-\infty}^{\infty} (t^3 + 1) \cos(2\pi(t + \frac{1}{2})) \delta(6 - 3t) dt$
- $\int_{-\infty}^{\infty} t^2 u(3 - t) u(t) dt$

4. Find $c(t) = g(t) \otimes h(t)$ for the shown signals.

