



1 DEFINITIONS

1. $\delta(t) = 0$ for $t \neq 0$.

$$\int_{-\infty}^{\infty} \delta(t) dt = 1 \quad (1.1)$$

2. The Fourier Transform of $g(t)$ is

$$G(f) = \int_{-\infty}^{\infty} g(t) e^{-j2\pi f t} dt \quad (1.2)$$

3. For the Fourier Transform pair,

$$g(t) \xleftrightarrow{\mathcal{F}} G(f) \quad (1.3)$$

$$g(t - t_0) \xleftrightarrow{\mathcal{F}} G(f) e^{-j2\pi f t_0} \quad (1.4)$$

$$G(t) \xleftrightarrow{\mathcal{F}} g(-f) \quad (1.5)$$

2 PROBLEMS

The following information is given about $x(t)$ and a_k .

1. $\delta(t) \xleftrightarrow{\mathcal{F}} ?$
2. $e^{-j2\pi f_c t} \xleftrightarrow{\mathcal{F}} ?$
3. $\cos(2\pi f_c t) \xleftrightarrow{\mathcal{F}} ?$
4. Sketch the Fourier Transform of $|\sin(2\pi t)|$.