Example 3

$$f(t) = \sum_{k=-\infty}^{\infty} c_k e^{jk\omega_0 t}$$

$$e^{j\omega_0 t} \iff 2\pi \delta(\omega - \omega_0)$$

$$c_1 e^{j\omega_0 t} \iff 2\pi c_1 \, \delta(\omega - \omega_0)$$

$$c_2 e^{j2\omega_0 t} \iff 2\pi c_2 \, \delta(\omega - 2\omega_0)$$

$$\vdots$$

$$c_n e^{j2\omega_0 t} \iff 2\pi c_n \, \delta(\omega - n\omega_0)$$

$$\vdots$$

$$c_{-n} e^{-jn\omega_0 t} \iff 2\pi c_{-n} \, \delta(\omega + n\omega_0)$$

$F(\omega)$

$f(t)$

FS.

Periodic
$2\pi c_k \, \delta(\omega - k\omega_0)$