

Example 2

$$e^{j\omega_0 t} u_0(t) \Leftrightarrow \pi \delta(\omega - \omega_0) + \frac{1}{j(\omega - \omega_0)}$$

$$e^{j\omega_0 t} f(t) \Leftrightarrow F(\omega - \omega_0)$$

$$u_0(t) = \pi \delta(\omega) + \frac{1}{j\omega}$$

$$e^{j\omega_0 t} u_0(t) \Leftrightarrow \pi \delta(\omega - \omega_0) + \frac{1}{j(\omega - \omega_0)}$$

QED.