

5.3.1 Lineaarisuus

$$\begin{aligned}\mathcal{F}\{\alpha f(t) + \beta g(t)\} &= \alpha \mathcal{F}\{f(t)\} + \beta \mathcal{F}\{g(t)\} \\ &= \alpha F(j\omega) + \beta G(j\omega)\end{aligned}$$

sillä

$$\begin{aligned}\int_{-\infty}^{\infty} [\alpha f(t) + \beta g(t)] e^{-j\omega t} dt &= \\ &= \alpha \int_{-\infty}^{\infty} f(t) e^{-j\omega t} dt + \beta \int_{-\infty}^{\infty} g(t) e^{-j\omega t} dt = \\ &= \alpha F(j\omega) + \beta G(j\omega)\end{aligned}$$

Samoin käänteismuunnettaessa.