	Time	*Frequency*
1	$\delta(t)$	1
2	$e^{-at}u_h(t), \quad a > 0$	$\frac{1}{a+j\omega}$
3	$p_\tau^h(t)$	$\tau \mathrm{sinc}\left(\frac{\omega\tau}{2\pi}\right) = \tau \frac{\sin(\omega\tau/2)}{\omega\tau/2}$
4	$\Delta_\tau(t)$	$\frac{\tau}{2}\mathrm{sinc}^2\left(\frac{\omega\tau}{4\pi}\right)$
5	1	$2\pi\delta(\omega)$
6	const	const $\times\, 2\pi\delta(\omega)$
7	$\cos(\omega_0 t)$	$\pi[\delta(\omega+\omega_0)+\delta(\omega-\omega_0)]$
8	$\sin(\omega_0 t)$	$j\pi[\delta(\omega+\omega_0)-\delta(\omega-\omega_0)]$
9	$\mathrm{sgn}(t)$	$\frac{2}{j\omega}$
10	$u_h(t)$	$\frac{1}{j\omega}+\pi\delta(\omega)$
11	$e^{-\alpha\lvert t\rvert}, \quad \alpha > 0$	$\frac{2\alpha}{\alpha^2+\omega^2}$
12	$e^{j\omega_0 t}$	$2\pi\delta(\omega-\omega_0)$
13	$\sum_{n=-\infty}^{\infty} X_n e^{jn\omega_0 t}, \quad \omega_0 = \frac{2\pi}{T}$	$2\pi \sum_{n=-\infty}^{\infty} X_n \delta(\omega - n\omega_0)$
14	$\sum_{n=-\infty}^{\infty} \delta(t-nT_0)$	$\omega_0 \sum_{n=-\infty}^{\infty} \delta(\omega-n\omega_0), \quad \omega_0 = \frac{2\pi}{T_0}$

Table 3.4: Common Fourier transform pairs