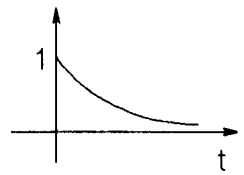
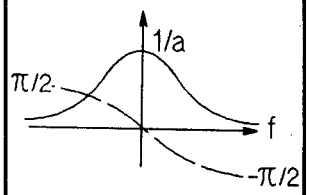
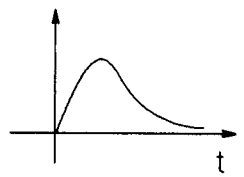
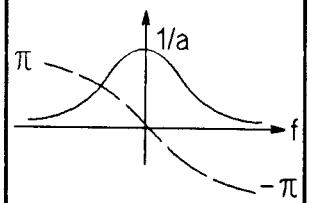
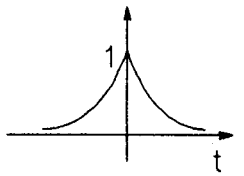
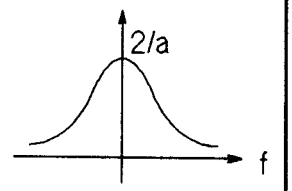
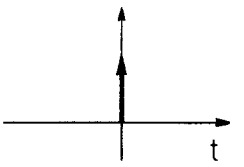
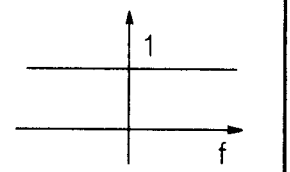
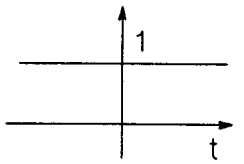
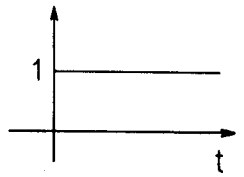
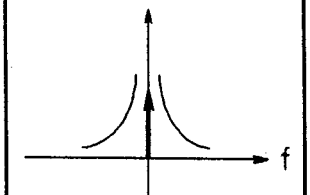
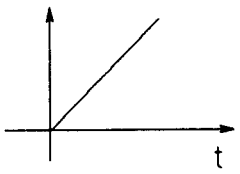
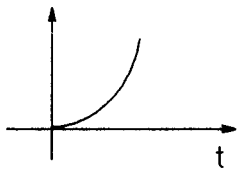
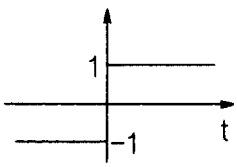
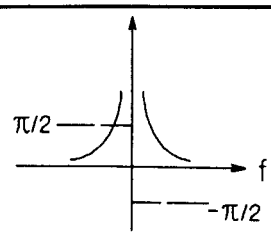
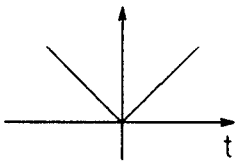
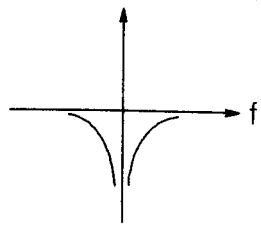
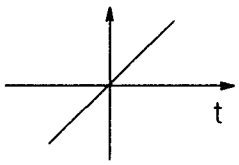
Proprietà	Segnale	Trasformata di Fourier
	$x(t) = \int_{-\infty}^{+\infty} X(f)e^{+j2\pi ft}df$	$X(f) = \int_{-\infty}^{+\infty} x(t)e^{-j2\pi ft}dt$
	$y(t) = \int_{-\infty}^{+\infty} Y(f)e^{+j2\pi ft}df$	$Y(f) = \int_{-\infty}^{+\infty} y(t)e^{-j2\pi ft}dt$
linearità	$ax(t) + by(t)$	$aX(f) + bY(f)$
inversione assi	$x(-t)$	$X(-f)$
coniugazione	$x^*(t)$	$X^*(-f)$
anticipo o ritardo	$x(t \pm \theta)$	$X(f)e^{\pm j2\pi f\theta}$
scalamento in t	$x(kt)$	$\frac{1}{\lvert k\rvert}X(\frac{f}{k})$
scalamento in f	$\frac{1}{\lvert k\rvert}x(\frac{t}{k})$	$X(kf)$
parità	$x(t)$ reale	$\mathcal{R}\{X(f)\}$ pari
	$x(t)$ reale	$\mathcal{I}\{X(f)\}$ dispari
	$x(t)$ reale	$\lvert X(f)\rvert$ pari
	$x(t)$ reale	$\arg\{X(f)\}$ dispari
	$x(t)$ reale e pari	$X(f)$ reale e pari
traslazione in f	$x(t)e^{\pm j2\pi f_0 t}$	$X(f \mp f_0)$
modulazione	$x(t)\cos(2\pi f_0 t)$	$\frac{1}{2}[X(f - f_0) + X(f + f_0)]$
convoluzione	$\int_{-\infty}^{+\infty} x(\tau)y(t - \tau)\,d\tau$	$X(f)Y(f)$
prodotto	$x(t)y(t)$	$\int_{-\infty}^{+\infty} X(a)Y(f - a)\,da$
derivazione	$\dot{x}(t)$	$j2\pi fX(f)$
integrazione	$\int_{-\infty}^{t} x(\tau)d\tau$	$\frac{1}{2}X(0)\delta(f) + X(f)/j2\pi f$
dualità	$X(t)$	$x(-f)$

Tabella 4.1 – Proprietà della trasformata di Fourier

	Funzione del tempo $x(t)$		Funzione della frequenza $X(f)$	
1		$e^{-at}u(t)$ $(a > 0)$	$\frac{1}{a + j2\pi f}$	
2		$ate^{-at}u(t)$ $(a > 0)$	$\frac{a}{(a + j2\pi f)^2}$	
3		$e^{-a\|t\|}$ $(a > 0)$	$\frac{2a}{a^2 + 4\pi^2 f^2}$	
4		$\delta(t)$	1	
5		1	$\delta(f)$	
6		$\delta^{(n)}(t)$	$(j2\pi f)^n$	
7		$u(t) = \begin{cases} 1, & t > 0 \\ 0, & t < 0 \end{cases}$	$\frac{1}{j2\pi f} + \frac{\delta(f)}{2}$	

	Funzione del tempo $x(t)$		Funzione della frequenza $X(f)$	
8		$tu(t) = \begin{cases} t, & t > 0 \\ 0, & t < 0 \end{cases}$	$\frac{-1}{(2\pi f)^2} + \frac{\delta(f)}{j4\pi f}$ $= \frac{1}{(j2\pi f)^2} + \frac{j\delta'(f)}{4\pi}$	
9		$t^n u(t) = \begin{cases} t^n, & t > 0 \\ 0, & t < 0 \end{cases}$	$\frac{n!}{(j2\pi f)^{n+1}} + \frac{\delta(f)n!}{2(j2\pi f)^n}$ $= \frac{n!}{(j2\pi f)^{n+1}} + j^n \frac{\delta^{(n)}(f)}{2(2\pi)^n}$	
10		$\mathrm{sgn}(t) = \begin{cases} 1, & t > 0 \\ 0, & t = 0 \\ -1, & t > 0 \end{cases}$	$\frac{1}{j\pi f}$	
11		$\lvert t \rvert$	$-\frac{1}{2\pi^2 f^2}$	
12		t	$j\frac{\delta'(f)}{2\pi}$	
13		t^n n intero ≥ 0	$\frac{j^n \delta^{(n)}(f)}{(2\pi)^n}$	
14		$\lvert t^n \rvert$ n dispari	$\frac{2n!}{(j2\pi f)^{n+1}}$	