Fourier Transforms

$$\mathscr{F}[f(x)] = \frac{1}{2\pi} \int_{-\infty}^{\infty} e^{-i\omega x} f(x) \, dx$$

$$\mathscr{F}_s[f(x)] = \frac{2}{\pi} \int_0^{\infty} \sin(\omega x) f(x) \, dx$$

$$\mathscr{F}_c[f(x)] = \frac{2}{\pi} \int_0^{\infty} \cos(\omega x) f(x) \, dx$$

$$\mathscr{F}_c^{-1}[F(\omega)] = \int_0^{\infty} \sin(\omega x) F(\omega) \, dx$$

$$\mathscr{F}_c^{-1}[F(\omega)] = \int_0^{\infty} \cos(\omega x) F(\omega) \, dx$$