- Take the Fourier transform $\mathcal{F}f$ and ask what happens if the sign of its argument is reversed

$$\mathcal{F}f(s) = \int_{-\infty}^{\infty} f(t)\, e^{-2\pi i s t}\, dt$$

$$\Rightarrow \mathcal{F}f(-s) = \int_{-\infty}^{\infty} f(t)\, e^{-2\pi i (-s) t}\, dt$$

$$= \int_{-\infty}^{\infty} f(t)\, e^{2\pi i s t}\, dt$$

$$= \mathcal{F}^{-1} f(s)$$

or removing the explicit statement of the independent variable

$$(\mathcal{F}f)^{-} = \mathcal{F}^{-1} f$$

- Because this holds for $f(t)$ and tempered distributions can be obtained from f by

T_f and $\lim_{\alpha \to 0} T_{f\alpha}$ it also holds for distributions

$$(\mathcal{F}T)^{-} = \mathcal{F}^{-1} T \checkmark$$

[see Osgood p82 – 85 & 179 – 182]