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0.1 Fourier transforms

0.1.1 Fourier transform

$$\hat{f}(\Xi) = \int_{-\infty}^{\infty} f(x) e^{-2\pi i x \Xi} dx$$

0.1.2 Inverse Fourier transform

$$f(x) = \int_{-\infty}^{\infty} \hat{f}(\Xi) e^{2\pi i x \Xi} d\Xi$$

0.1.3 Fourier inversion theorem