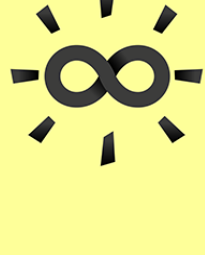


The Bright Side of Mathematics



Fourier Transform – Part 1

↳ applications in physics, computer science,...
(JPEG compression, equalization of audio recordings,...)

Fourier series

$$f: \mathbb{R} \rightarrow \mathbb{R} \text{ (or } \mathbb{C})$$

periodic function

$$f: [a, b] \rightarrow \mathbb{R} \text{ (or } \mathbb{C})$$

↕ transform

$$\hat{f}: \mathbb{Z} \rightarrow \mathbb{C}$$

continuous Fourier transform

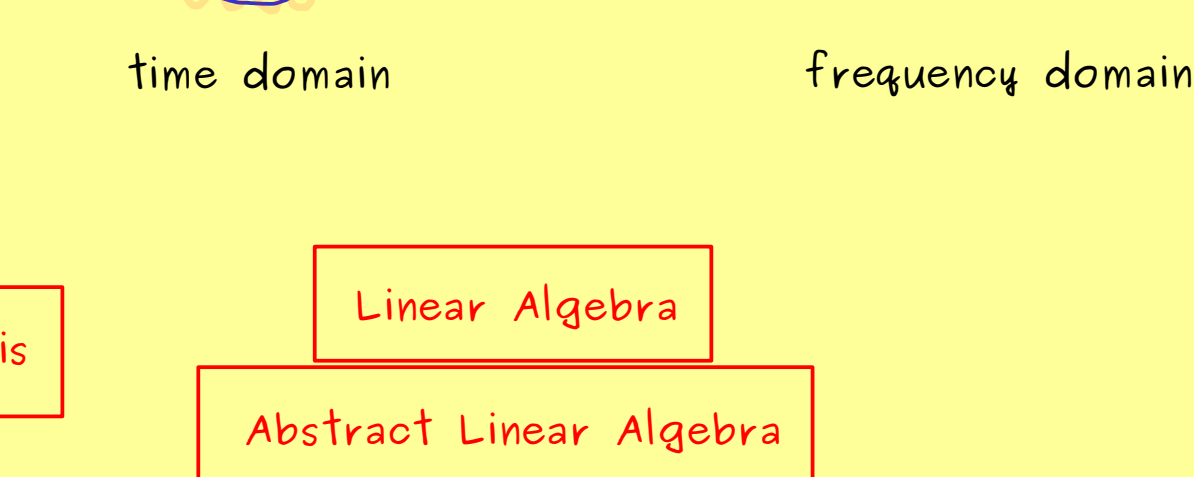
$$f: \mathbb{R}^n \rightarrow \mathbb{R} \text{ (or } \mathbb{C})$$

↕ transform

$$\hat{f}: \mathbb{R}^n \rightarrow \mathbb{C}$$

Fourier analysis on groups
general measure theory

Idea of Fourier transform:



Requirements:

