FOURIER-TRANSZFORMÁCIÓ
alaptulajdonságai

$$\begin{aligned}
\mathcal{F}(f(x)+g(x);\, s) &= \mathcal{F}(f(x);\, s)+\mathcal{F}(g(x);\, s) \\
\mathcal{F}(c\cdot f(x);\, s) &= c\cdot\mathcal{F}(f(x);\, s) \quad (c\in\mathbb{C}) \\
\mathcal{F}(f(ax);\, s) &= \frac{1}{a}\mathcal{F}(f(x);\, \frac{s}{a}) \quad (a>0) \\
\mathcal{F}(f(-x);\, s) &= \mathcal{F}(f(x);\, -s) \\
\mathcal{F}(f(x-x_0);\, s) &= e^{-isx_0}\cdot\mathcal{F}(f(x);\, s) \\
\mathcal{F}(e^{i\omega_0 x}\cdot f(x);\, s) &= \mathcal{F}(f(x);\, s-\omega_0) \\
\mathcal{F}(x\cdot f(x);\, s) &= i\cdot\frac{d}{ds}\mathcal{F}(f(x);\, s) \\
\mathcal{F}(f'(x);\, s) &= is\cdot\mathcal{F}(f(x);\, s)
\end{aligned}$$

Alap-Fourier-transzformáltak:

1. $\mathcal{F}(e^{-|x|};\, s)=\sqrt{\frac{2}{\pi}}\cdot\frac{1}{1+s^2}$

2. $\mathcal{F}(e^{-x^2/2};\, s)=e^{-s^2/2}$

3. $f(x)=\begin{cases}1 & \text{ha} \quad -1<x<1 \\ 0 & \text{ha} \quad |x|>1\end{cases}$ esetén

$$\mathcal{F}(f(x);\, s)=\sqrt{\frac{2}{\pi}}\cdot\frac{\sin s}{s}.$$