FOURIER-TRANSZFORMÁCIÓ

$$\mathcal{F}(f(x)+g(x);\, s)=\mathcal{F}(f(x);\, s)+\mathcal{F}(g(x);\, s) \qquad \mathcal{F}(c\cdot f(x);\, s)=c\cdot\mathcal{F}(f(x);\, s) \quad (c\in\mathbb{C})$$

$$\mathcal{F}(f(ax);\, s)=\frac{1}{a}\mathcal{F}(f(x);\, \frac{s}{a}) \quad (a>0) \qquad \mathcal{F}(f(-x);\, s)=\mathcal{F}(f(x);\, -s)$$

$$\mathcal{F}(f(x-x_0);\, s)=e^{-isx_0}\cdot\mathcal{F}(f(x);\, s) \qquad \mathcal{F}(e^{i\omega_0 x}\cdot f(x);\, s)=\mathcal{F}(f(x);\, s-\omega_0)$$

$$\mathcal{F}(x\cdot f(x);\, s)=i\cdot\frac{d}{ds}\mathcal{F}(f(x);\, s) \qquad \mathcal{F}(f'(x);\, s)=is\cdot\mathcal{F}(f(x);\, s)$$

Alap-Fourier-transzformáltak:

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

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

LAPLACE-TRANSZFORMÁCIÓ

$$\mathcal{L}(f(x)+g(x);\, s)=\mathcal{L}(f(x);\, s)+\mathcal{L}(g(x);\, s) \qquad \mathcal{L}(c\cdot f(x);\, s)=c\cdot\mathcal{L}(f(x);\, s) \quad (c\in\mathbb{C})$$

$$\mathcal{L}(f(ax);\, s)=\frac{1}{a}\mathcal{L}(f(x);\, \frac{s}{a}) \quad (a>0) \qquad \mathcal{L}(f(x-x_0);\, s)=e^{-sx_0}\cdot\mathcal{L}(f(x);\, s)$$

$$\mathcal{L}(e^{ax}\cdot f(x);\, s)=\mathcal{L}(f(x);\, s-a) \qquad \mathcal{L}((f*g)(x);\, s)=\mathcal{L}(f(x);\, s)\cdot\mathcal{L}(g(x);\, s)$$

$$\mathcal{L}(xf(x);\, s)=-\frac{d}{ds}\mathcal{L}(f(x);\, s) \qquad \mathcal{L}(f'(x);\, s)=s\cdot\mathcal{L}(f(x);\, s)-f(0)$$

Alap-Laplace-transzformáltak:

$$\mathcal{L}(1;\, s)=\frac{1}{s} \qquad \mathcal{L}(e^{ax};\, s)=\frac{1}{s-a}$$

$$\mathcal{L}(x^n;\, s)=\frac{n!}{s^{n+1}} \qquad \mathcal{L}(\delta(x);\, s)=1$$