



7.
$$\int_{-\infty}^{\infty} \frac{a + b \operatorname{sign}(x - t)}{|x - t|^{1-\lambda}} y(t) dt = f(x), \quad 0 < \lambda < 1.$$

Solution:

$$y(x) = \frac{\lambda \sin(\pi\lambda)}{4\pi [a^2 \cos^2(\frac{1}{2}\pi\lambda) + b^2 \sin^2(\frac{1}{2}\pi\lambda)]} \int_{-\infty}^{\infty} \frac{a + b \operatorname{sign}(x - t)}{|x - t|^{1+\lambda}} [f(x) - f(t)] dt.$$

References

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