

15.
$$y(x) - \lambda \int_0^\infty e^{\mu(x-t)} \sin(xt) y(t) dt = f(x)$$
.

Solution:

$$y(x) = \frac{f(x)}{1 - \frac{\pi}{2}\lambda^2} + \frac{\lambda}{1 - \frac{\pi}{2}\lambda^2} \int_0^\infty e^{\mu(x-t)} \sin(xt) f(t) dt, \qquad \lambda \neq \pm \sqrt{2/\pi}.$$

Reference

Polyanin, A. D. and Manzhirov, A. V., Handbook of Integral Equations, CRC Press, Boca Raton, 1998.

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