



10. $y(x) - \lambda \int_0^{\infty} \cos(xt)y(t) dt = f(x).$

Solution:

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

References

Krasnov, M. L., Kiselev, A. I., and Makarenko, G. I., *Problems and Exercises in Integral Equations*, Mir Publ., Moscow, 1971.

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