



20.
$$\int_0^\infty t J_\nu(xt) y(t) dt = f(x), \quad \nu > -\frac{1}{2}.$$

Here, $J_\nu(z)$ is the Bessel function of the first kind.

Solution:

$$y(x) = \int_0^\infty t J_\nu(xt) f(t) dt.$$

The function $f(x)$ and the solution $y(t)$ are the **Hankel transform** pair.

References

- Ditkin, V. A. and Prudnikov, A. P.**, *Integral Transforms and Operational Calculus*, Pergamon Press, New York, 1965.
Polyanin, A. D. and Manzhirov, A. V., *Handbook of Integral Equations*, CRC Press, Boca Raton, 1998.