

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

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.

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