



$$26. \int_a^x \{ \cos[\lambda(x-t)] + b \} y(t) dt = f(x), \quad f(a) = 0.$$

For $b = 0$, see equation 1.24. For $b = -1$, see equation 1.25.

1°. Solution for $b(b+1) > 0$:

$$y(x) = \frac{f'_x(x)}{b+1} + \frac{\lambda^2}{k(b+1)^2} \int_a^x \sin[k(x-t)] f'_t(t) dt, \quad \text{where } k = \lambda \sqrt{\frac{b}{b+1}}.$$

2°. Solution for $b(b+1) < 0$:

$$y(x) = \frac{f'_x(x)}{b+1} + \frac{\lambda^2}{k(b+1)^2} \int_a^x \sinh[k(x-t)] f'_t(t) dt, \quad \text{where } k = \lambda \sqrt{\frac{-b}{b+1}}.$$

Reference

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