

2.
$$\int_{a}^{x} (Ax + Bt + C)y(t) dt = f(x), \quad f(a) = 0.$$

1°. Solution for $B \neq -A$:

$$y(x) = \frac{d}{dx} \left\{ \left[(A+B)x + C \right]^{-\frac{A}{A+B}} \int_a^x \left[(A+B)t + C \right]^{-\frac{B}{A+B}} f_t'(t) \, dt \right\}.$$

 2° . Solution for B = -A:

$$y(x) = \frac{1}{C} \frac{d}{dx} \left[\exp\left(-\frac{A}{C}x\right) \int_{a}^{x} \exp\left(\frac{A}{C}t\right) f_{t}'(t) dt \right].$$

Reference

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

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