

6.
$$y(x) + \int_0^\infty f(t)y(t)y\left(\frac{x}{t}\right)dt = 0$$
.

1°. A solution:

$$y(x) = -kx^C$$
, $k = \left[\int_0^\infty f(t) dt\right]^{-1}$,

where C is an arbitrary constant.

- 2° . The equation has the trivial solution $y(x) \equiv 0$.
- 3°. The substitution $y(x) = x^{\beta}w(x)$ leads to an equation of the same form,

$$w(x) + \int_0^\infty f(t)w(t)w\left(\frac{x}{t}\right)dt = 0.$$

Reference

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

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