



45. $y(\sin x) + y(\cos x) = f(x)$.

The function $f(x)$ is assumed to satisfy the condition $f(x) = f\left(\frac{\pi}{2} - x\right)$.

Solution in implicit form:

$$y(\sin x) = \frac{1}{2}f(x) + \Phi(\sin x, \cos x),$$

where $\Phi(x, z) = -\Phi(z, x)$ is any antisymmetric function of two arguments.

Reference

Polyanin, A. D. and Manzhirov, A. V., *Handbook of Integral Equations: Exact Solutions (Supplement. Some Functional Equations)* [in Russian], Faktorial, Moscow, 1998.