



6. $y^2(x) + y^2(a - x) = b^2$.

Particular solutions:

$$y_{1,2}(x) = \pm b \sin\left(\frac{\pi x}{2a}\right), \quad y_{3,4}(x) = \pm b \cos\left(\frac{\pi x}{2a}\right).$$

Reference

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