6. $y(x) + \lambda \int_a^x \frac{y(t)\,dt}{\sqrt{x-t}} = f(x).$

Abel equation of the second kind (Abel integral equation of the second kind). This equation is encountered in problems of heat and mass transfer.

Solution:

$$y(x) = F(x) + \pi\lambda^2 \int_a^x \exp[\pi\lambda^2(x-t)]F(t)\,dt,$$

where

$$F(x) = f(x) - \lambda \int_a^x \frac{f(t)\,dt}{\sqrt{x-t}}.$$

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