

Solving ODEs with Laplace Transforms

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Process Dynamics and Control

Laplace transform is the alternative path to solve complex ODEs

Initial value problem for first-order linear ODE

Zill Ex. 4.2.4 Use Laplace transform to solve the initial value problem

$$\frac{dy}{dt} + 3y = 13 \sin(2t), \quad y(0) = 6$$

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$$\frac{dy}{dt} + 3y = 13 \sin(2t), \quad y(0) = 6$$

Initial value problem for second-order linear ODE

Zill Ex. 4.2.5 Use Laplace transform to solve the initial value problem

$$y'' - 3y' + 2y = e^{-4t}, \quad y(0) = 1, \quad y'(0) = 5$$

Initial value problem for second-order linear ODE

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