PROBLEM SET 24: SECOND-ORDER LINEAR DIFFERENTIAL EQUATIONS

Note: Most of the problems were taken from the textbook [1].

Problem 1. *Solve the differential equations.*

a) $4y'' + 4y' + 4y = 0$;

b) $y = y''$;

c) $\frac{d^R}{dt^2} + 6\frac{dR}{dt} + 34R = 0$;

d) $3\frac{d^V}{dt^2} + 4\frac{dV}{dt} + 3V = 0$.

Problem 2. *Solve the initial-value problem.*

a) $y'' - 2y' - 3y = 0$, $\quad y(0) = y'(0) = 2$;

b) $9y'' + 12y' + 4y = 0$, $\quad y(0) = 1$, $\ y'(0) = 0$;

c) $y'' - 6y' + 10y = 0$, $\quad y(0) = 2$, $\ y'(0) = 3$.

REFERENCES

[1] J. Stewart: *Single Variable Calculus* 8th Edition, Cengage Learning, Boston 2015.