Comments on HW3

To find the solution to the initial value problem, we first find the general solution of the equation, which has the form

\[ y = c_1 y_1 + c_2 y_2, \]

(if \( y_1, y_2 \) form a fundamental set of solutions of the Second linear ODE (this can be verified by showing that \( W(y_1, y_2) \neq 0 \)), then we turn to the initial condition \( y(t_0) = y_0, y'(t_0) = y'_0 \) to construct the linear algebraic equations with respect to \( c_1, c_2 \), solve for \( c_1, c_2 \), therefore we get the solution to the initial value problem.

Problem 5 involves the knowledge in Section 3.4, you can leave this until next Monday’s lecture.