

**PRACTICE EXAM 4 SPRING (267)**

**Problem 1.** Find a general solution to the system of ordinary differential equations

$$x' = 2x + y + 2e^t \quad y' = x + 2y - 3e^t.$$

**Problem 2.** Find a general solution to the system of ordinary differential equations

$$y_1' = y_1 - 4y_2 \quad y_2' = 4y_1 + 9y_2.$$

**Problem 3.** Find a general solution to the system of ordinary differential equations

$$y_1' = 8y_1 - 6y_2 \quad y_2' = 6y_1 + 8y_2.$$

**Problem 4.** Find a general solution to the system of ordinary differential equations

$$y_1' = 8y_1 + 4y_2 \quad y_2' = 6y_1 - 2y_2.$$