Math 3413.001: Physical Mathematics I

Homework 2, due January 30 (Thursday)

Lecture 3 (Jan 21) - Due date 01/30/2020

Section 1.4

1. Solve the differential equation $e^{-x}yy' - x = 0$.
2. Solve the IVP $y' = 2x(y-1), y(1) = 2$.

Section 1.5

1. Solve the IVP $y' + y/x = x^2, y(1) = 2$.
2. Solve the IVP $y' - 2y = xe^{-2x}, y(0) = 1$.

Suggested problems from the book (DO NOT SUBMIT): Pg 40-44, #2, 5, 17, 22.
Suggested problems from the book (DO NOT SUBMIT): Pg 53-55, #4, 9, 20, 25.

Lecture 4 (Jan 23) - Due date 01/30/2020

Section 1.6

1. Solve the differential equation $x^2y' = y(x+y)$.
2. Solve the IVP $y' = 2 - \sqrt{2x - y + 3},\ y(3) = 5$.

Suggested problems from the book (DO NOT SUBMIT): Pg 69-71, #2, 5, 20, 27