

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.