

**Physics 3221**  
**Fall Term 2018**  
**Homework Problem Set 2**

Due Monday, September 10, 13:40 pm in class.

**Reading:** The first three sections from Chapter 2. In particular, before you attempt the first four problems, make sure to read Section 2.1 “Air Resistance” and work through Example 2.1 “A baseball and some drops of liquid” on page 45 on your own.

Please make a note on your homework how long it took you to complete the homework.

**Problem 1.** Linear drag force due to Stokes’s law. Problem 2.2★ from the textbook.

**Problem 2.** Reynolds number. Problem 2.3★ from the textbook.

**Problem 3.** Origin of the quadratic drag force. Problem 2.4★★ from the textbook.

**Problem 4.** A steel ball bearing swimming in glycerin. Problem 2.10★★ from the textbook.

**Problem 5.** Vertical motion with linear drag. Problem 2.11★★ from the textbook.

**Problem 6.** Motion under the action of a velocity-dependent force. Problem 2.14★★★ from the textbook. You are allowed to use the end result from Problem 2.7 which we derived in class.