Homework 15

Math 147 (section 501–502–503), Spring 2015

This homework is due on MONDAY, May 4. (*Announcement:* there will be a quiz that day.)

0. Read Section 7.1.

1. Assume that the concentration $c(t)$ of a drug in the bloodstream at time t satisfies the differential equation
$$\frac{dc}{dt} = -0.1e^{-0.2t} \ .$$

   (a) Is $c(t)$ an increasing function or decreasing or neither?

   (b) Determine the function $c(t)$ under the additional assumption that the limit of the concentration is 0 as time goes to infinity.

   (c) How long does it take for the concentration to halve?

2. Section 6.1 # 82

3. Section 6.2 # 10, 48, 60, 120

4. Section 7.1 # 12, 16, 22, 32, 42

5. (These problems are *not* to be turned in!)

   (a) Section 6.2 # 39, 52, 64, 106, 123

   (b) Section 7.1 # 7, 17, 31, 48

REMINDER: The final exam is on Tuesday, May 12, from 8–10am, in the usual lecture room (RICH 114). Please bring pencils and a 15-question scantron form.