Individual Homework #1: Due September 5

Please read Section 1.1 in the text, and do, and hand in, the following exercises from that section: pp. 19-27, exercises 15, 16, 17, 19, 21, 22.

In completing this and *any* homework assignment, please write legibly and in complete sentences. Failure to do so **will** affect your course grade!!

Some hints and notes:

1. For exercise 19a, You should refer to the subsection **"The Rate of Transmission"** beginning on page 8 of your text. In particular, that subsection describes (and we discussed in class) the relationship between the transmission coefficient a, and the chance (which we called q) that a susceptible will fall ill upon contact with an infected.

2. For exercise 19c, note that the phrase "the number of infected immediately goes down from 2100" can be translated as: "I' (the rate of change of I) is *negative* at time $t = 0$." (Remember: a function that is decreasing has a negative rate of change.)

3. For exercise 21a, again see page 8 (or the class notes from the first week of classes), for a discussion of how the transmission coefficient a is related to the percentage p of the infected population that a typical susceptible contacts each day, and to the fraction q of such contacts that lead to infection.