Math 118 – Week 1  
Fall Term 2003

Friday August 29 Class 1:

We will construct the SIR model, a system of equations that describes the spread of an epidemic through a population.

Reading:

CiC, p. 1-9

Homework #1 (4 points):

Let $P = P(t)$ be a function that represents the size of a population at some time $t$. Consider the following differential equation: $P' = .017P$. This differential equation is an example of a “population growth model.”

Type up your responses to the following questions, using complete sentences to express your thoughts. Submit your answer on a single sheet of paper with your name and email address.

(a) Why is the name “population growth” appropriate for the model? How does the equation model how a population might grow?

(b) What type of function must $P(t)$ be in order to satisfy the equation? What is your reasoning? (Note: You are NOT asked to solve the equation.)

Due: Class 2 (Wednesday September 1)