Workshop #1
APM 115: mathematical modeling

1. Introduction to Matlab

2. Consider the growth rate of the logistic equation $r(N)$ plotted in (a). You may want to start from the sample Matlab program workshop01.m.

   - Write an analytic expression for this growth rate as well as for the right hand side of the logistic equation, $\dot{x} = f(N) = r(N) * N$.
   - Plot both using Matlab
   - Use the graphics method to solve for the fixed points and their stability.
   - Use ode45 in Matlab to solve for N(t) starting an initial condition that is close but not equal to zero. (use the program given to you as a starting point).

3. Repeat all the above items for the growth rate shown in (b).

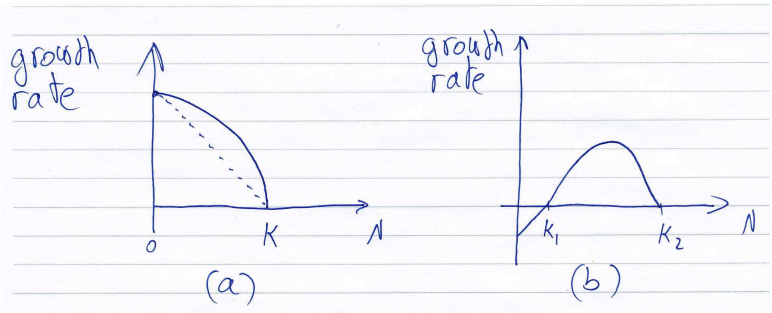

Figure 1: two logistic growth rates