Economics 314 Spring 2014
Daily Question #11 (Optional) February 21

In Section 3.2, Romer develops a simplified version of his R&D growth model that has knowledge capital but no physical capital. In class, we'll focus on the more realistic version of 3.3 in which both kinds of capital are present. This question focuses on the simpler case to prepare you for the more complete model analysis.

1. Derive equation (3.8), the "growth rate of the growth rate of A."
2. Why is setting (3.8) equal to zero a reasonable concept of a steady state?
3. Why is Case 1 essentially equivalent to the Solow model in which the rate of growth of productivity is a given constant?
4. Answer each of the following questions about Case 3:
    a. If the labor force is growing, what is happening to the rate of productivity growth?
    b. If the labor force is constant, what is happening to the rate of productivity growth?
    c. In the latter case, what effects will an increase in the share of the population devoted to knowledge production have on the level and/or growth rate productivity?