UNIVERSITY OF CALIFORNIA
DEPARTMENT OF ECONOMICS

Economics 202B
Spring 2008
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# Problem Set 3
Due in lecture Thursday, February 14

1. Romer, Problem 2.7.

2. Romer, Problem 2.9, parts (a), (b), and (c).

3. Romer, Problem 2.10.

4. Consider an economy described by the Ramsey-Cass-Koopmans model. Suppose the economy is initially on its balanced growth path. Now suppose the government, which had previously done nothing, starts to purchase fraction h of the economy's output at each point in time, and that it finances these purchases through lump-sum (that is, non-distortionary) taxes at each point in time. Assume that the change is unexpected.

Explain (in words -- no math needed) how this change affects the $\dot{c} = 0$ and/or $\dot{k} = 0$ curves in the standard phase diagram in (k,c) space. What happens to c and k at the time of the change in government policy? What are the dynamics of c and k thereafter?

EXTRA PROBLEMS (NOT TO BE HANDED IN/ONLY SKETCHES OF ANSWERS WILL BE PROVIDED)

5. Redo the household maximization problem in the Ramsey model using the present value Hamiltonian rather than the current value Hamiltonian. Show that this approach leads to the same expressions for $\dot{c}/c$ and $\lim_{t\to\infty} e^{-[R(t)-(n+g)t]k(t)}$ as before.

6. Romer, Problem 2.9, parts (d), (e), and (f).

7. Romer, Problem 2.11.