Economics 362, Macroeconomic Theory
Problem set on Solow Model
You might want to use a calculator for this problem set.

1) Suppose an economy's aggregate production function is $Y = K^{1/4}L^{3/4}$, its savings rate *s* is three-tenths (people save three tenths of their income), and its depreciation rate is ten percent per year (one-tenth of the capital stock disappears each year through depreciation). The population (labor force) is stable, not growing.

a) What is the "per-worker" production function that relates output per worker *y* to capital per worker *k*?

b) Find *k**, the long-run steady state value of *k.*

2) Suppose the savings rate rises to one-half. What is the new value of *k**?

3) Using a graph that has k on the horizontal axis and y on the vertical axis, show what happens in the *short run* and in the *long run* when the savings rate rises from three-tenths to one-half.

4) In words, describe what happens to *k* over this transition, and what happens to *y*. Be clear. Use full sentences.