1. Consider an economy with the following features
   i) Year 1 GDP = $100,000,000,000 ($100 billion)
   ii) Year 1 Population = 20,000,000 (20 million)
   iii) Year 1 workforce size = 9,000,000 (9 million)

   a) Calculate GDP per capita
   b) Calculate “GDP per worker” (also known as “worker productivity” on an annual basis)
   c) Calculate hourly worker productivity, assuming the average worker works 2000 hours per year

2. For the economy in (1), generate 100 years of data (in a spreadsheet),
   i) (Scenario 1) assuming that the growth rate of
      a) labor productivity is 3% annually
      b) population & workforce is 2% annually
   ii) (Scenario 2) assuming that the growth rate of
      a) labor productivity is 1.5% annually
      b) population & workforce is 2% annually

   The part to be turned in:
   a) Compute GDP per capita under the 2 different productivity growth scenarios above; graph
      (100 years of data for both series, on 1 single graph) and compare; discuss (Note: don’t turn
      in the data -- just the graph)
   b) On another graph, graph and compare 100 years of total GDP (i.e. not per capita) for the 2
      scenarios above. Discuss.

3. EXTRA CREDIT:
   Go to http://www.bls.gov/lpc/data.htm ; Beside Industry Productivity and Costs, choose Top Picks.
   a) Download and graph the productivity data for the first 5 industries listed.
   b) In which industry has productivity grown fastest since 2002? In which has it grown slowest?
   c) In which industry has productivity grown fastest since 1987? In which has it grown slowest?
      (Hint: Calculate and compare the percentage change in the index number from 1987-2007)