1. From 1950 to 2000, GDP per capita in the US grew from $11,921 to $32,629, while GDP per capita in Japan grew from $2216 to $24,772. Compute the annualized growth rate of GDP over this period for each country. Can you explain why Japan’s economy grew faster than that of the US during this period? (Hint: think about diminishing returns to capital.)

2. Consider a primitive society in which population responds positively to the difference between output and the subsistence level of output. Starting from an initial point where the population is stable (i.e. not growing), suppose that the subsistence level of output falls owing to improvements in health care and medical treatment. Explain what happens, and why, to output, labor productivity and population in the short-run and long-run, assuming no capital accumulation or technological advances. Use a graph to illustrate your explanation.

3. Over the past few decades, real output in many Asian countries, such as Singapore and Korea, has grown at extraordinarily high rates. Some economists claim that this growth has been caused solely by growth in labor and capital, and not by advances in technology. If these economists are correct, why might we expect this growth not to be sustainable?

4. Briefly define the following concepts, and explain how they are related to economic growth: a) the division of labor; and b) human capital.

5. a) Consider two modern economies (in which the population is stable) that are identical in every respect except that households in economy A save more of their income than households in economy B. How will these economies differ in terms of the level of output, labor productivity, and the growth rates of output and productivity? Explain. b) Now consider countries C and D, both identical except that firms in country C allocate more scarce resources to research and development (which tends to lead to improved production methods) than those in country D. How will these countries differ in terms of the same variables above?