

**Introduction to Macroeconomics  
Practice #4**

**Multiple Choices**

1. Labour productivity grows as
  - a. consumption expenditure increases.
  - b. depreciation increases.
  - c. physical capital grows.
  - d. human capital grows.
  - e. both C and D are correct.
2. Which of the following statements regarding human capital is INCORRECT?
  - a. Human capital is the accumulated skill and knowledge of human beings.
  - b. Education is the only vehicle for the creation of human capital because training simply reinforces what has already been learned.
  - c. The accumulation of human capital is the source of both increased labour productivity and technological advance.
  - d. Writing and mathematics, the most basic of human skills, are crucial elements in economic progress.
3. Which of the following is not a source of economic growth?
  - a. increasing stock market prices
  - b. better educated workers
  - c. growing physical capital
  - d. appropriate incentive system
  - e. advances in technology
4. In 2010, Northland had real GDP of \$4.21 billion and a population of 2.98 million. In 2011, real GDP was \$4.59 billion and population was 2.97 million. What was Northland's economic growth rate in 2011?
  - a. 0.38 percent
  - b. 3.8 percent
  - c. 8.3 percent
  - d. 9.0 percent
  - e. 11.1 percent
5. Over the past century in Canada, by how much has real GDP per person grown?
  - a. by about 1 percent per year
  - b. by about 2 percent per year
  - c. by about 4 percent per year
  - d. by about 6 percent per year
6. Of the following countries, which grew the slowest between 1870 and 2008?
  - a. Germany
  - b. the United Kingdom
  - c. Canada
  - d. the United States
7. Which of the following is a correct way to measure productivity?
  - a. divide the number of hours worked by output
  - b. divide output by the number of hours worked
  - c. divide the number of workers by output
  - d. divide output by population
8. Why are Canadian workers more productive than the Chinese?
  - a. because Canada is a federal state
  - b. because Canadians have more capital to work with
  - c. because prices are higher in Canada than in China
  - d. because the most productive Chinese workers have emigrated to Canada
9. Which of the following would be considered physical capital?
  - a. the pizza oven at the Liquidity Preferences Tavern
  - b. soy beans used to make soy milk
  - c. the skills and knowledge of a barber
  - d. the number of hours people spend in the gym

10. One of the ten principles of economics is that people face tradeoffs. The growth that arises from capital accumulation is not a free lunch. What is the opportunity cost of that capital accumulation?
  - a. People need to work longer hours, thus having less time for leisure.
  - b. **People need to consume less goods and services now in order to enjoy more consumption in the future.**
  - c. People need to recycle resources so that future generations can produce goods and services with the accumulated capital.
  - d. People need to devote less time in school and more at work.
11. Suppose that there are diminishing returns to capital. Suppose also that two countries are the same except one has less capital, and so less real GDP per person, than the other. Suppose that the saving rate in both countries increases from 5 percent to 6 percent. Which of the following would we expect over the next ten years?
  - a. The growth rate will not change in either country.
  - b. **The country with less capital will grow faster.**
  - c. The country with more capital will grow faster.
  - d. Both countries will grow at the same rate.
12. The economic development minister of a country has a list of things she thinks may explain her country's low growth of real GDP per person relative to other countries. She asks you to pick the one you think most likely explains her country's low growth. Which of the following contributes to low growth?
  - a. strong private property rights
  - b. **tariffs and quotas**
  - c. encouraging foreign investment
  - d. low population growth

### Short Answers

1. Why is productivity related to the standard of living? In your answer be sure to explain what productivity and standard of living mean. Make a list of things that determine labour productivity.

The standard of living is a measure of how well people live. Income per person is an important dimension of the standard of living and is positively correlated with other things such as nutrition and life expectancy that make people better off. Productivity measures how much people can produce in an hour. As productivity increases, people can produce more (and use less to produce the same amount) and so their standard of living increases.

The factors that determine labour productivity include the amounts of physical capital (equipment and structures), human capital (knowledge and skills), and natural resources available to workers, as well as the state of technological knowledge in society.

2. A puzzle: The share of GDP devoted to investment was similar for Canada and South Korea over the period 1960–1990. However, South Korea had a 7 percent growth rate of average annual income, while Canada had only a 2.5 percent growth rate. How can this be explained?

The solution to the puzzle is based on the concept of diminishing returns to capital. A country that has a lot of income, and so a lot of capital, gains less by adding more capital than does a country that currently has little capital. It is easy to envision how a capital poor country could increase its output considerably with even a little more capital.