EC 102 **Name:** ____________________
Summer 2019
Due: 7/23/2019

Problem Set 3

Multiple Choice

1. (2 points) Suppose a country reduces restrictions on how many hours people can work. If reducing these restrictions increase the total number of hours worked in the economy, but all other factors that determine output are held fixed, then

   A. productivity and output both rise.

   B. productivity rises and output falls.

   C. productivity falls and output rises.

   D. productivity and output fall.

2. (2 points) Rapid population growth

   A. may depress economic prosperity by reducing the amount of capital which each worker has to work with

   B. was hailed by Thomas Robert Malthus as the key to future economic growth.

   C. tends to lead to higher levels of educational attainment.

   D. is the main reason that less developed nations are poor.

3. (2 points) The president of a poor country has announced that he will implement the following measures which he claims are designed to increase growth:

   (i) Reduce corruption in the legal system

   (ii) Reduce reliance on market forces because they allocate goods and services in an unfair manner

   (iii) Restrict investment in domestic industries by foreigners because they take some of the profits out of the country

   (iv) Encourage trade with neighboring countries

   (v) Increase the fraction of GDP devoted to consumption

   How many of these measures will have a positive effect on growth?

   A. 1

   B. 2

   C. 3

   D. 4

4. (2 points) The supply of loanable funds would shift to the right if either
   A. tax reforms encouraged greater saving or the budget deficit became smaller.
   B. tax reforms encourages greater saving or investment tax credits were increased.
   C. the budget deficit became larger or investment tax credits were increased.
   D. the budget deficit became larger or tax reforms discouraged saving

5. (2 points) According to the definitions of private and public saving, if Y , C, and G remained the same, an increase in taxes would
   A. raise both private and public saving
   B. raise private saving and lower public saving
   C. lower private saving and raise public saving
   D. lower private and public saving

6. (2 points) Which of the following statements is not correct?
   A. If GDP is rising faster than debt, the government is, in some sense, living within its means
   B. The ratio of debt to GDP in the US has always remained constant
   C. Debts during wars may distribute the burden of fighting the war more evenly across generations.
   D. During times of peace in the United States, the ratio of debt to GDP sometimes rose.

7. (2 points) Which of the following is correct?
   A. Natural resources clearly place limits on growth; there is simply no way to reduce either the amount or type of natural resources needed to produce goods.
   B. There is no debate about the effects of higher population growth on economic growth.
   C. How much an increase in capital increases a country's output is independent of that country's current level of capital.
   D. Historically, outward rather than inward policies have tended to promote economic growth

8. (2 points) Suppose private saving in a closed economy is $12 billion and investment is $10 billion
   A. National saving must equal $12 billion
   B. Public saving must equal $2 billion
   C. The government budget surplus must equal $2 billion
   D. The government budget deficit must equal $2 billion

9. (2 points) If your firm's production function has constant returns to scale and you increase all your inputs by 60% then your firm's output will

   A. increase by 60%

   B. increase, but by less than 60%

   C. increase by more than 60%

   D. not change

10. (2 points) If there is a shortage of loanable funds, then

    A. the supply for loanable funds shifts right and the demand shifts left.

    B. the supply for loanable funds shifts left and the demand shifts right.

    C. neither curve shifts, but the quantity of loanable funds supplied increases and the quantity demanded decreases as the interest rate rises to equilibrium

    D. neither curve shifts, but the quantity of loanable funds supplied decreases and the quantity demanded increases as the interest rate falls to equilibrium.

Short Answer Questions

1. (5 points) Suppose that GDP is \$14 trillion and the government debt is \$7 trillion.

   (a) What is the debt-to-GDP ratio?

   (b) Suppose that GDP grows 1.5%, while debt grows at 5%. What is the new debt-to-GDP ratio? How does it compared to the one in (a)?

   (c) Suppose instead, that GDP grows at 3.5%, while debt grows at 2%. What is the debt-to-GDP ratio in this case? How does it compare to those in parts (a) and (b)?

   (d) (True/False) It is possible for government debt to be growing while the debt-to-GDP ratio is declining. Defend your answer.

2. (5 points) At what rate would the economy have to grow on average if we wanted GDP to double by 2040?

3. (5 points) Economists in Funlandia, a closed economy, have collected the following information about the economy a for a particular year:

$$\begin{aligned} Y &= 10,000 \\ C &= 6,000 \\ T &= 1,500 \\ G &= 1,700 \end{aligned}$$

The economists also estimate that the investment function is:

$$I = 3,300 - 100r,$$

where r is the country's real interest rate, expressed as a percentage. Calculate private saving, public saving, national saving, investment, and the equilibrium real interest rate.