University of Lethbridge — Department of Economics
ECON 1012 — Introduction to Microeconomics
Instructor: Michael G. Lanyi

Chapter 22 — Economic Growth

1) Economic growth is
   A) equal to real GDP per capita multiplied by 70.
   B) always accompanied by a rising price level.
   C) a sustained expansion of production possibilities measured as the increase in real GDP over a given period.
   D) a sustained expansion of consumption expenditure over a given period.
   E) a sustained expansion of production possibilities measured as the increase in nominal GDP over a given period.

   Topic: The Basics of Economic Growth

In 2005, Armenia had a real GDP of approximately $4.21 billion and a population of 2.98 million. In 2006, real GDP was $4.59 billion and population was 2.97 million.

2) In 2008, Armenia had real GDP of $4.21 billion and a population of 2.98 million. In 2009, real GDP was $4.59 billion and population was 2.97 million. What was Armenia's economic growth rate in 2009?
   A) 0.38 percent
   B) 8.3 percent
   C) 11.1 percent
   D) 3.8 percent
   E) 9.0 percent

   Topic: The Basics of Economic Growth

3) In 2008, Armenia had real GDP of $4.21 billion and a population of 2.98 million. In 2009, real GDP was $4.59 billion and population was 2.97 million. Between 2008 and 2009, Armenia's standard of living _____.
   A) doubled.
   B) decreased
   C) did not change
   D) might have increased, decreased, or remained unchanged
   E) increased

   Topic: The Basics of Economic Growth

4) In 2008, Armenia had real GDP of $4.21 billion and a population of 2.98 million. In 2009, real GDP was $4.59 billion and population was 2.97 million. Armenia's real GDP per person in 2009 was
   A) $1.41.
   B) $132.
   C) $1,545.
   D) $1,413.
   E) $380.

   Topic: The Basics of Economic Growth

5) During 2009, the country of Economia had real GDP of $115 billion and the population was 0.9 billion. In 2008, real GDP was $105 billion and the population was 0.85 billion. In 2009, real GDP per person was
    A) $12,778.
    B) $117.
    C) $128.
    D) $135.
    E) $124.
    Topic: The Basics of Economic Growth

6) During 2009, the country of Economia had real GDP of $115 billion and the population was 0.9 billion. In 2008, real GDP was $105 billion and the population was 0.85 billion. In 2008, real GDP per person was
    A) $135.
    B) $124.
    C) $117.
    D) $1,235.
    E) $128.
    Topic: The Basics of Economic Growth

7) Suppose a country's population grows by 2 percent a year and, at the same time, its real GDP grows by 5 percent a year. Real GDP per person is increasing by _____ a year.
    A) 10 percent
    B) 5 percent
    C) 2 percent
    D) 16 percent
    E) 3 percent
    Topic: The Basics of Economic Growth

8) The Rule of 70 is used to
    A) calculate the economy's growth rate.
    B) estimate how long it will take the level of any variable to double.
    C) estimate how much of an economy's growth rate is attributable to technological advance.
    D) estimate how much of an economy's growth rate is attributable to increases in capital per hour of labour.
    E) calculate the standard of living.
    Topic: The Basics of Economic Growth

9) Using the Rule of 70, if the country of Flowerdom's current growth rate of real GDP per person is 7 percent a year, how long will it take the country's real GDP per person to double?
    A) 7 years
    B) 1 year
    C) 49 years
    D) 2 years
    E) 10 years
    Topic: The Basics of Economic Growth

10) Using the Rule of 70, if the country of Flowerdom's current growth rate of real GDP per person is 10 percent a year, how long will it take the country's real GDP per person to double?
    A) 10 years
    B) 1 year
    C) 49 years
    D) 7 years
    E) 0.7 years

11) Slowdonia's current growth rate of real GDP per person is 2 percent a year. How long will it take to double real GDP per person?
    A) 35 years
    B) 28.6 years
    C) 2 years
    D) approximately 10 years
    E) half a year

12) Slowdonia's current growth rate of real GDP per person is 1 percent a year. How long will it take to double real GDP per person?
    A) 35 years
    B) 70 years
    C) 10 years
    D) 100 years
    E) Real GDP per person will never double

13) If real GDP per person is growing at 4 percent per year, it will double in
    A) 25 years.
    B) 17.5 years.
    C) 8 years.
    D) 4 years.
    E) 56 years.

14) Suppose a country is producing $20 million of real GDP. If the economy grows at 10 percent per year, approximately how many years will to take for real GDP to grow to $80 million?
    A) 14
    B) 30
    C) 3.5 years
    D) 7
    E) 4

15) Real GDP per person in the country of Flip is $10,000, and the growth rate is 10 percent a year. Real GDP per person in the country of Flap is $20,000 and the growth rate is 5 percent a year. When will real GDP per person be greater in Flip than in Flap?
  A) never
  B) in 7 years
  C) in 10 years
  D) in 15 years
  E) in 2 years

16) Growthland's real GDP per capita was $112 billion in 2009 and $117 billion in 2010. What is the growth rate of Growthland's real GDP per capita?
  A) 4.3%
  B) 4.5%
  C) 17%
  D) 12%
  E) 5%

17) In which of the following decades did Canada experience the slowest economic growth?
  A) 1960s
  B) 1970s
  C) 1980s
  D) 1940s
  E) 1990s

18) Canada's economic growth rate was highest in which of the following decades?
  A) the 1960s
  B) the 1970s
  C) the 1980s
  D) the 1930s
  E) the 1990s

19) Which of the following statements about Canada's long−term growth trends is *false*?
  A) Economic growth rates show periods of slow and high growth.
  B) Economic growth rates have generally been faster in Japan than in Canada.
  C) Economic growth rates were faster in the 1990s than in the 1980s.
  D) African countries have fallen further behind Canada in recent years.
  E) Economic growth rates have been steady, except for the business cycle.

20) Between 1926 and 2007 real GDP per person in Canada grew at an average rate of
  A) 2.8 percent a year.
  B) 2.1 percent a year.
  C) 3.6 percent a year.
  D) 4.3 percent a year.
  E) 1.7 percent a year.

21) Compared to growth in other countries, between 1960 and 2007 Canada
    A) worsened dramatically versus the United States, but did better versus other countries.
    B) dramatically caught up to and passed other countries.
    C) fell behind most other countries.
    D) did as well or better than most countries except certain Asian countries.
    E) did none of the above.

22) Between 1990 and 2008, the gap between real GDP per person in Canada and real GDP per person in Japan
    _____.
    A) was equal to the gap between real GDP per person in the United States and real GDP per person in Japan
    B) remained the same
    C) narrowed
    D) widened
    E) none of the above

23) Between 1990 and 2008, the gap between real GDP per person in Canada and real GDP per person in Japan
    _____.
    A) was equal to the gap between real GDP per person in the United States and real GDP per person in Japan
    B) widened
    C) remained the same
    D) narrowed
    E) none of the above

24) Between 1926 and 2007, the average growth rate of real GDP per person in Canada was _____ percent a
    year. During this period, _____ grew at a faster rate than _____.
    A) 3.1; the population; real GDP
    B) 2.1; GDP; the population
    C) 3.1; inflation; real GDP
    D) 1.1; inflation; real GDP
    E) 2.1; real GDP; the population

25) Convergence between real GDP per person in Canada and Japan was relatively _____ during the 1960s;
    convergence has recently been _____.
    A) slow; increasing
    B) rapidly; continuing at the 1960s pace
    C) slow; decreasing
    D) rapid; decreasing
    E) rapid; increasing at an even faster rate

26) The gap between real GDP per person in Canada and Hong Kong has _____ since 1960. During this period, the growth rate of real GDP per person in Canada has been _____ than in Hong Kong.
   A) reversed; slower
   B) decreased; faster
   C) remained constant; equal
   D) increased; faster
   E) reversed; faster

27) Between 1960 and 2008, growth rates in real GDP per person in Hong Kong, Korea, Singapore, Taiwan, and China _____ the growth rate of real GDP per person in Canada.
   China's real GDP per person today is approximately equal to real GDP per person in Hong Kong in _____.
   A) were less than; 1978
   B) were approximately equal to; 1968
   C) were less than; 1988
   D) exceeded; 1968
   E) exceeded; 1998

28) An increase in labour hours will lead to
   A) both a movement along and an upward shift of the aggregate production function.
   B) neither a movement along nor a shift of the aggregate production function.
   C) an upward shift of the aggregate production function.
   D) a movement along the aggregate production function.
   E) a downward shift of the aggregate production function.

29) The aggregate production function is graphed as
   A) a downward–sloping curve.
   B) an upward–sloping line that becomes steeper as the quantity of labour increases.
   C) an upward–sloping line that becomes flatter as the quantity of labour increases.
   D) an upward–sloping straight line.
   E) a production possibilities frontier.

30) The decreasing slope of the aggregate production function reflects
   A) increasing aggregate demand.
   B) decreasing costs.
   C) rising unemployment.
   D) diminishing returns.
   E) a decrease in potential GDP.

31) According to the law of diminishing returns, along the aggregate production function an additional unit of
   A) labour increases the real wage rate.
   B) labour produces less output than the previous unit.
   C) capital produces more output than an additional unit of labour.
   D) labour decreases output.
   E) labour produces more output than the previous unit.

Use the figure below to answer the following question.

Real GDP (billions of 2002 dollars)
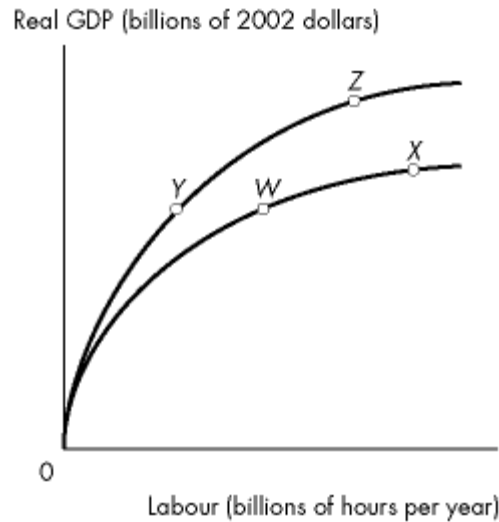

Labour (billions of hours per year)

Figure 22.3.1

32) Refer to Figure 22.3.1. The country of Kemper is on its aggregate production function at point *W* in the above
figure. If the population increases with no change in capital or technology, the economy will
   A) move to point such as *Y*.
   B) move to point such as *X*.
   C) remain at point *W*.
   D) move to point such as *Z*.
   E) either remain at point *W* or move to point *X*.

Topic: How Potential GDP Grows

33) If the money wage rate is $15.00 an hour and the price level is 120, the real wage rate is
   A) $12.50 an hour.
   B) $18 an hour.
   C) $15.00 an hour.
   D) $10.75 an hour.
   E) $8.50 an hour.

Topic: How Potential GDP Grows

34) If the money wage rate is $10.00 an hour and the price level is 60, the real wage rate is
   A) $10.00 an hour.
   B) $16.67 an hour.
   C) $18.75 an hour.
   D) $6.00 an hour.
   E) $12.50 an hour.

Topic: How Potential GDP Grows

35) If the real wage rate is $10.00 an hour and the price level is 60, the money wage rate is
    A) $10.00 an hour.
    B) $16.75 an hour.
    C) $16.67 an hour.
    D) $18.50 an hour.
    E) $6.00 an hour.

36) When the quantity of labour demanded exceeds the quantity of labour supplied, the real wage rate
    A) falls to eliminate the labour market shortage.
    B) falls to eliminate the labour market surplus.
    C) rises to eliminate the labour market shortage.
    D) rises to eliminate the labour market surplus.
    E) does not change but the money wage rate rises to eliminate the labour market shortage.

37) In the labour market, an increase in labour productivity _____ the real wage rate and _____ the level of employment.
    A) raises; decreases
    B) raises; does not change
    C) raises; increases
    D) lowers; decreases
    E) lowers; increases

Use the figure below to answer the following questions.

Real wage rate (2002 dollars per hour)

Figure 22.3.2

38) Refer to Figure 22.3.2. The equilibrium real wage rate is
    A) $10 an hour.
    B) $20 an hour.
    C) $15 an hour.
    D) any wage rate below $15 an hour.
    E) any wage rate above $15 an hour.
   Topic: How Potential GDP Grows

39) Refer to Figure 22.3.2. The equilibrium quantity of labour is
    A) 250 billion hours.
    B) 150 billion hours.
    C) 200 billion hours.
    D) 100 billion hours.
    E) 50 billion hours.
   Topic: How Potential GDP Grows

40) Refer to Figure 22.3.2. The equilibrium quantity of labour is
    A) 50 billion hours.
    B) 250 billion hours.
    C) 150 billion hours.
    D) 100 billion hours.
    E) 200 billion hours.
   Topic: How Potential GDP Grows

41) Refer to Figure 22.3.2. If the real wage is $20 an hour, a labour
    A) surplus will occur and the real wage will fall.
    B) surplus will occur and the demand for labour will increase.
    C) shortage will occur and the real wage will fall.
    D) shortage will occur and the real wage will rise.
    E) surplus will occur and the real wage will rise.

42) When the population increases with no change in labour productivity, employment _____ and potential GDP _____.
    A) increases; does not change
    B) increases; increases
    C) decreases; decreases
    D) increases; decreases
    E) decreases; increases

Use the table below to answer the following questions.

Table 22.3.1

Real wage rate (2002 dollars per hour)	Quantity of labour demanded (billions of hours per year)	Quantity of labour supplied (billions of hours per year)
15	70	10
20	60	20
25	50	30
30	40	40
35	30	50

Real GDP (trillions of 2002 dollars per year)	Quantity of labour (billions of hours per year)
3	20
9	30
14	40
18	50
21	60

43) Refer to Table 22.3.1. The tables show the labour market and the aggregate production function schedule for the country of Pickett. Potential GDP is _____.
    A) $9 trillion
    B) $40 trillion
    C) $6 trillion
    D) $14 trillion
    E) $25 trillion

44) Refer to Table 22.3.1. The tables show the labour market and the production function schedule for the country of Pickett. An increase in population changes the quantity of labour supplied by 20 billion hours at each real wage rate. Potential GDP _____.
   A) decreases to $3 trillion.
   B) increases to $20 trillion.
   C) increases to $50 trillion.
   D) does not change.
   E) increases to $18 trillion.

45) Labour productivity is
   A) real GDP per hour of labour times the population.
   B) the quantity of real GDP produced by an hour of labour.
   C) the rate of change in real GDP per hour of labour.
   D) real GDP per hour of labour times the hours of work.
   E) none of the above.

46) If real GDP is $800 million and aggregate labour hours are 20 million, labour productivity is _____.
   A) $160 an hour
   B) $40 million
   C) $16,000 million
   D) $40 an hour
   E) $16 an hour

47) If real GDP is $12,150 billion and aggregate labour hours are 270 billion, labour productivity equals
   A) $45 an hour.
   B) $6.50 an hour.
   C) $32.81 an hour.
   D) $48 an hour.
   E) $650 an hour.

48) When labour productivity increases, the demand for labour curve _____ and the supply of labour curve _____.
   A) shifts leftward; does not shift
   B) shifts rightward; does not shift
   C) shifts rightward; shifts rightward
   D) shifts rightward; shifts leftward
   E) shifts leftward; shifts rightward

49) An increase in labour productivity _____ the real wage rate and an increase in population _____ the real wage rate.
    A) raises; raises
    B) lowers; lowers
    C) lowers; raises
    D) raises; lowers
    E) raises; does not change
    Topic: How Potential GDP Grows

50) An increase in population results in
    A) a leftward shift of the labour supply curve.
    B) a movement along the production function.
    C) an upward shift in the production function.
    D) a rightward shift of the labour demand curve.
    E) both B and D are correct.
    Topic: How Potential GDP Grows

51) If the population increases, then potential GDP _____, employment _____, and _____ potential GDP per hour of labour.
    A) increases; increases; increases
    B) increases; increases; decreases
    C) decreases; increases; increases
    D) increases; decreases; decreases
    E) decreases; decreases; decreases
    Topic: How Potential GDP Grows

52) If new capital increases labour productivity, the supply of labour _____ and the demand for labour _____.
    A) increases; stays the same
    B) stays the same; increases
    C) decreases; stays the same
    D) increases; decreases
    E) increases; increases
    Topic: How Potential GDP Grows

Use the figure below to answer the following question.

Real wage rate (2002 dollars per hour)

Figure 22.3.3

53) Refer to Figure 22.3.3. As a result of the rightward shift in the demand curve for labour from LD_0 to LD_1, the equilibrium level of employment _____, potential GDP _____, and potential GDP per hour of labour _____.

    A) increases; increases; increases
    B) decreases; increases; decreases
    C) increases; increases; decreases
    D) increases; decreases; increases
    E) decreases; decreases; decreases

54) *Ceteris paribus*, an increase in labour productivity results in a
    A) higher real wage rate and higher potential GDP per hour of labour.
    B) higher real wage rate and lower potential GDP per hour of labour.
    C) lower real wage rate and higher potential GDP per hour of labour.
    D) lower real wage rate and lower potential GDP per hour of labour.
    E) constant real wage rate in the long run.

55) *Ceteris paribus*, an increase in population results in a
    A) higher level of labour employed and higher potential GDP per hour of labour.
    B) constant level of labour employed and constant potential GDP per hour of labour.
    C) lower level of labour employed and higher potential GDP per hour of labour.
    D) lower level of labour employed and lower potential GDP per hour of labour.
    E) higher level of labour employed and lower potential GDP per hour of labour.

56) Labour productivity grows as
    A) depreciation increases.
     B) consumption expenditure increases.
    C) physical capital grows.
    D) human capital grows.
     E) both C and D are correct.

57) If capital per hour of labour increases, labour productivity
    A) increases because the level of technology increases.
     B) increases for a given level of technology.
    C) does not change unless technology advances at the same time.
    D) decreases for a given level of technology.
     E) decreases because the level of technology decreases.

58) If capital per hour of labour decreases, real GDP per hour of labour
    A) increases because the level of technology increases.
     B) decreases because the level of technology decreases.
    C) increases for a given level of technology.
    D) decreases for a given level of technology.
     E) none of the above.

59) An increase in education and training
    A) increases labour productivity.
     B) decreases real GDP growth.
    C) increases aggregate hours.
    D) is an increase in physical capital.
     E) increases the employment–to–population ratio.

60) _____ is the accumulated skill and knowledge of human beings.
    A) Technology
     B) Human capital
    C) Human investment
    D) Capital
     E) Labour productivity

61) Human capital is the
    A) machinery used by humans to produce GDP.
     B) skill and knowledge accumulated by humans.
    C) plant and equipment produced by humans and not by machines.
    D) technology used by humans to produce GDP.
     E) none of the above.

62) Which of the following statements regarding human capital is *incorrect*?
   A) Education is the only vehicle for the creation of human capital because training simply reinforces what has already been learned.
   B) Human capital is the accumulated skill and knowledge of human beings.
   C) Writing and mathematics, the most basic of human skills, are crucial elements in economic progress.
   D) The accumulation of human capital is the source of both increased labour productivity and technological advance.
   E) All of the above statements are correct.

63) Growth accounting measures the contribution to labour productivity of
   A) the accumulation of physical capital.
   B) the accumulation of human capital.
   C) new technologies.
   D) all of the above.
   E) none of the above.

64) The purpose of growth accounting is to determine
   A) the most accurate ways of measuring depreciation.
   B) how rapidly capital grows.
   C) how much of labour productivity growth is attributable to changes in physical capital and human capital, and how much is attributable to technological change.
   D) how rapidly GDP grows.
   E) how much of real GDP growth is attributable to increases in consumption and how much is attributable to increases in investment.

65) Separating the sources of labour productivity growth is the purpose behind
   A) macroeconomics.
   B) growth accounting.
   C) classical growth theory.
   D) the national income and product accounts.
   E) the production possibilities curve.

66) Suppose capital per hour of labour grows at 3.0 percent a year and technological change increases labour productivity by 1.0 percent a year. If the economy follows a one –third rule, the growth rate of labour productivity is _____ percent a year.
   A) 1.0
   B) 2.0
   C) 7.0
   D) 4.0
   E) 5.0

67) Suppose capital per hour of labour grows at 3.0 percent a year and the growth rate of labour productivity is 2.0 percent a year. If the economy follows a one–third rule, technological change leads to a _____ percent a year change in labour productivity.
   A) 0.5
   B) 5.0
   C) 4.0
   D) 3.0
   E) 1.0

68) If capital per hour of labour grows by 3 percent a year and labour productivity grows by 2.5 percent a year, a one–third rule says that the growth in labor productivity can be divided so that capital growth accounts for _____ percent growth in labour productivity and technological change accounts for _____ percent growth in labour productivity.
   A) 2.5; 2.5
   B) 2.5; 0
   C) 3.0; –0.5
   D) 1.0; 1.0
   E) 1.0; 1.5

69) If capital per hour of labour increases 6 percent and labour productivity increases by 4 percent, then according to a one–half rule technological change
   A) was negative.
   B) accounted for 1/2 of the 4 percent growth in labour productivity.
   C) accounted for 1 percent of the 4 percent growth in labour productivity.
   D) accounted for 2 percent of the 4 percent growth in labour productivity.
   E) accounted for 3 percent of the 6 percent growth in capital per hour of labour.

70) In Lotusland, labour productivity grows at 6 percent a year and capital per hour of labour increases by 6 percent a year. A one–quarter rule tells us that capital per hour of labour increases labour productivity by _____.
   A) 6 percent a year
   B) 3 percent a year
   C) 2 percent a year
   D) 1.5 percent a year
   E) 12 percent a year

71) In Lotusland, labour productivity grows at 6 percent a year and capital per hour of labour increases by 6 percent a year. A one–quarter rule tells us that technological change increases labour productivity by _____.
   A) 4 percent a year
   B) 6 percent a year
   C) 3 percent a year
   D) 4.5 percent a year
   E) 12 percent a year

72) Dreamland follows a one–third rule. Capital per hour of labour increases by 3 percent a year and technological change increases labour productivity by 1 percent a year. Labour productivity increases by _____.
   A) 2 percent a year
   B) 4 percent a year
   C) 5 percent a year
   D) 6 percent a year
   E) 3 percent a year

73) In Lotusland, labour productivity grows at 5 percent a year and technology increases labour productivity by 5 percent a year. If Lotusland follows a one–half rule, capital per hour of labour grows by _____ percent a year.
   A) 5
   B) 0
   C) 10
   D) 30
   E) 15

74) A one–third rule predicts that if capital per hour of labor increases by 6 percent and labour productivity increases by 6 percent, then the increase in capital per hour of labour increases labour productivity by _____ and technological change increases labour productivity by _____.
   A) 0 percent; 6 percent
   B) 4 percent; 2 percent
   C) 2 percent; 4 percent
   D) 3 percent; 3 percent
   E) 6 percent; 0 percent

75) Suppose that capital per hour of labour increases by 9 percent. If labour productivity increases by 10 percent, a one–third rule states that capital per hour of labour accounts for a
   A) 7 percent of the growth rate in labour productivity, with technology accounting for the remaining 3 percent.
   B) 2 percent of the growth rate in labour productivity, with technology accounting for the remaining 8 percent.
   C) 4 percent of the growth rate in labour productivity, with technology accounting for the remaining 6 percent.
   D) 3 percent of the growth rate in labour productivity, with technology accounting for the remaining 7 percent.
   E) none of the above.

76) Suppose that labour productivity grew by 6 percent last year and capital per hour of labour grew 9 percent. Using a one–quarter rule, by how much did the increase in capital per hour of labour increase labour productivity?
   A) 2 percent
   B) 3 percent
   C) 6 percent
   D) 4 percent
   E) 2.25 percent

Use the table below to answer the following questions.

Table 22.4.1

Year	Capital per hour of labour (seashells)	Labour productivity (seashells)
2007	600.0	400.0
2008	654.0	424.0
2009	719.4	466.4

77) Refer to Table 22.4.1. The table shows capital per hour of labour and labour productivity for the beach economy of Whitepool. Whitepool follows a one–third rule. In the year 2008, how many seashells respectively does the increase in capital per hour of labor contribute and how many seashells of growth does technological change contribute to the growth in labour productivity?
    A) 12 seashells; 12 seashells
    B) 54 seashells; –30 seashells
    C) 3 seashells; 3 seashells
    D) 24 seashells; 0 seashells
    E) none of the above

78) Refer to Table 22.4.1. The table shows capital per hour of labour and labour productivity for the beach economy of Whitepool. Whitepool follows a one–third rule. In the year 2008, how many seashells respectively does the increase in capital per hour of labor contribute and how many seashells of growth does technological change contribute to the growth in labour productivity?
    A) 12 seashells; 12 seashells
    B) 54 seashells; –30 seashells
    C) 24 seashells; 0 seashells
    D) 3 seashells; 3 seashells
    E) none of the above

79) Refer to Table 22.4.1. The table shows capital per hour of labour and labour productivity for the beach economy of Whitepool. Whitepool follows a one–third rule. In the year 2009, what is the contribution respectively of the increase in capital per hour of labor and the contribution of technological change to the growth in labour productivity?
    A) 3 1/3 percent; 6 2/3 percent
    B) 5 percent; 5 percent
    C) none of the above.
    D) 10 percent; 0 percent
    E) 0 percent; 10 percent

80) In 2006, capital per hour of labor was $250 and real GDP per hour of labor was $50. In 2007, real GDP per hour of labor was $55. If there was no change in technology between 2006 and 2007, then capital per hour of labor in 2007 was _____.
  A) $325
  B) $252
  C) $227
  D) $275
  E) $280

81) Which of the following is *not* a source of economic growth?
  A) increasing stock market prices
  B) appropriate incentive system
  C) growing physical capital
  D) better educated workers
  E) advances in technology

82) Which of the following was a cause of Canada's post –1973 growth slowdown?
  A) higher population pressures
  B) diminishing returns
  C) too rapid increases in technological change
  D) slowdowns in technological change
  E) lower saving

83) For three years, there was no technological change in Longland but capital per hour of labour increased from $10 to $20 to $30 and real GDP per hour of labour increased from $3.80 to $5.70 to $7.13.
Then, in the fourth year, capital per hour of labour remained constant but real GDP per hour of labour increased to $10.
Longland _____ experience diminishing returns because _____.
  A) does not; in the fourth year capital per hour of labour does not change
  B) does; in the fourth year capital per hour of labour does not change
  C) does not; as capital per hour of labour increases, real GDP per hour of labour also increases
  D) does; as capital per hour of labour increases, real GDP per hour of labour increases but by smaller amounts
  E) none of the above

84) For three years, there was no technological change in Longland but capital per hour of labour increased from $10 to $20 to $30 and real GDP per hour of labour increased from $3.80 to $5.70 to $7.13.
Then, in the fourth year, capital per hour of labour remained constant but real GDP per hour of labour increased to $10.
In Longland, a 1 percent increase in capital per hour of labour increases labour productivity by _____ percent.
  A) 0.50
  B) 0.25
  C) 1.00
  D) 0.20
  E) 0.33

85) Which one of the following quotations could be attributed to a supporter of the classical growth theory?
    A) "Prosperity will last as long as there is knowledge accumulation."
    B) "Growth will last as long as technology keeps advancing."
    C) "Growth will last as long as knowledge accumulation continues."
    D) "Prosperity will last as long as technology keeps advancing."
    E) "Growth will last only until the increase in population brings productivity down to the subsistence level."
    Topic: Growth Theories and Policies

86) The new growth theory holds that growth can persist indefinitely based on the major assumption that
    A) knowledge is a public capital good.
    B) discoveries result from regulations.
    C) knowledge destroys profit.
    D) discoveries bring profit.
    E) knowledge capital does not experience diminishing returns.
    Topic: Growth Theories and Policies

87) In classical growth theory, if the real wage is higher than the subsistence real wage, then all of the following are true *except*
    A) eventually the real wage will fall.
    B) the change in population brings increasing returns to labour.
    C) the supply of labour increases.
    D) the population increases.
    E) labour productivity eventually decreases.
    Topic: Growth Theories and Policies

88) Which theory of economic growth argues that growth does *not* automatically slow down?
    A) classical growth theory
    B) new growth theory
    C) neoclassical growth theory
    D) all of the theories
    E) none of the theories
    Topic: Growth Theories and Policies

89) Which theory of economic growth argues that, in the long run, people do not benefit from growth?
    A) neoclassical growth theory
    B) new growth theory
    C) classical growth theory
    D) all of the theories
    E) none of the theories
    Topic: Growth Theories and Policies

90) Which theory of economic growth argues that population growth lowers the real wage rate and stops economic growth?
    A) new growth theory
    B) classical growth theory
    C) neoclassical growth theory
    D) all of the theories
    E) none of the theories
    Topic: Growth Theories and Policies

91) The key difference between the neoclassical growth theory and the classical growth theory is that
    A) a one–third rule only holds in neoclassical growth theory.
    B) growth in the neoclassical growth theory ends with a population explosion.
    C) capital is not subject to diminishing returns under classical growth theory.
    D) increases in population drive workers' incomes back down to the subsistence level in classical growth theory.
    E) capital is subject to diminishing returns under classical growth theory.

Topic: Growth Theories and Policies

92) The key difference between the neoclassical growth theory and the new growth theory is that
    A) the pace of technological advances are caused by chance in new growth theory.
    B) capital is subject to diminishing returns under new growth theory.
    C) increases in population drive workers' incomes back down to the subsistence level in neoclassical growth theory.
    D) labour productivity grows indefinitely in neoclassical growth theory.
    E) capital is not subject to diminishing returns under new growth theory.

Topic: Growth Theories and Policies

93) In the classical growth theory, economic growth eventually stops due to
    A) high population growth resulting from the increase in the real wage rate.
    B) diminishing returns.
    C) the real rate of interest falling back down to its target rate.
    D) real GDP per person becoming too high.
    E) knowledge capital being easily replicated.

Topic: Growth Theories and Policies

94) In the classical growth theory, economic growth eventually stops due to
    A) diminishing returns.
    B) high population growth resulting from the increase in the real wage rate.
    C) knowledge capital being easily replicated.
    D) the real rate of interest falling back down to its target rate.
    E) real GDP per person becoming too high.

Topic: Growth Theories and Policies

95) In the neoclassical growth theory, economic growth eventually stops after a technological advance when
    A) the return on capital falls and the incentive to invest weakens.
    B) the real wage rate increases.
    C) knowledge capital is replicated.
    D) high population growth occurs.
    E) the subsistence real wage rate falls.

Topic: Growth Theories and Policies

96) Knowledge capital is different from physical capital because knowledge capital
    A) experiences diminishing returns.
    B) does not experience diminishing returns.
    C) is free.
    D) increases with investment.
    E) none of the above.

Topic: Growth Theories and Policies

97) Growth eventually stops in neoclassical growth theory when
    A) the return on capital increases.
    B) technology stops advancing.
    C) saving increases.
    D) discoveries are replicated.
    E) population growth lowers the real wage rate.

98) Classical growth economists believe that
    A) the real wage rate rises above its subsistence level in the long run.
    B) the real wage rate falls below its subsistence level in the long run.
    C) the real wage rate does not rise above its subsistence level in the long run.
    D) growth persists indefinitely.
    E) none of the above.

99) An assumption of the neoclassical growth theory is that
    A) the marginal product of all types of capital increases as more capital is accumulated.
    B) encouraging international trade increases economic growth.
    C) discoveries are a public capital good.
    D) technological advances are the result of chance.
    E) people earn a subsistence real wage in the long run.

100) An assumption of the new growth theory is that
    A) the marginal product of all types of capital increases as more capital is accumulated.
    B) technological advances encourage international trade.
    C) the growth rate of labour productivity depends on people's ability to innovate.
    D) people earn a subsistence real wage in the long run.
    E) all technological advances are the result of chance.

101) Which theory of economic growth concludes that technological advances are influenced by the profit motive?
    A) new growth theory
    B) neoclassical growth theory
    C) classical growth theory
    D) neo growth theory
    E) none of the theories

102) Compared to physical capital, knowledge capital
    A) can be replicated without diminishing returns.
    B) leads to an automatic slowdown in growth.
    C) can be held in your hand.
    D) cannot be replicated without diminishing returns.
    E) none of the above.

103) Which of the following is a suggestion for increasing Canadian economic growth rates?
　　A) Protect our industries from foreign competition.
　　B) Reduce the time period for patent protection to increase replication.
　　C) Tax education.
　　D) Put less public research funds into universities.
　　E) Stimulate saving by taxing consumption.

104) In neoclassical growth theory, if the rate of return on capital increases due to a technological advance, then
　　A) the rate of return on capital will eventually decline.
　　B) real GDP per hour of labour will decrease.
　　C) capital per hour of labour will decrease.
　　D) population growth will explode.
　　E) the rate of return on capital will never decline.

105) According to _____ growth theory, growth of real GDP per person comes to a stop because a population explosion returns real GDP per person to the subsistence real wage rate.
According to _____ growth theory, growth of real GDP per person comes to a stop when technology stops advancing.
According to _____ growth theory, growth of real GDP per person is unending.
　　A) classical; new; neoclassical
　　B) new; neoclassical; classical
　　C) classical; neoclassical; new
　　D) neoclassical; classical; new
　　E) new; classical; neoclassical

106) Choose the statements concerning neoclassical growth theory which are true.
　1.　Neoclassical growth theory was developed in the late 19th century.
　2.　The rate of technological change influences the economic growth rate but economic growth does not influence the pace of technological change.
　3.　Economic growth will stop if technology stops advancing.
　4.　Technological change results from the choices people make in the pursuit of profit.
　　A) Statements 1 and 3 are correct.
　　B) Statements 1 and 4 are correct.
　　C) Statements 3 and 4 are correct.
　　D) Statements 2 and 4 are correct.
　　E) Statements 2 and 3 are correct.

107) All of the following statements are included in new growth theory *except* _____.
　　A) discoveries result from choices
　　B) discoveries bring profit, and competition destroys profit
　　C) the forces of competition destroy incentives to make new discoveries
　　D) discoveries are a public capital good
　　E) knowledge is capital that is not subject to the law of diminishing returns

1) C	51) B	101) A
2) E	52) B	102) A
3) E	53) A	103) E
4) C	54) A	104) A
5) C	55) E	105) C
6) B	56) E	106) E
7) E	57) B	107) C
8) B	58) D	
9) E	59) A	
10) D	60) B	
11) A	61) B	
12) B	62) A	
13) B	63) D	
14) A	64) C	
15) D	65) B	
16) B	66) B	
17) C	67) E	
18) A	68) E	
19) E	69) C	
20) B	70) D	
21) D	71) D	
22) D	72) A	
23) B	73) B	
24) E	74) C	
25) D	75) D	
26) A	76) E	
27) D	77) A	
28) D	78) A	
29) C	79) A	
30) D	80) A	
31) B	81) A	
32) B	82) D	
33) A	83) D	
34) B	84) A	
35) E	85) E	
36) C	86) E	
37) C	87) B	
38) C	88) B	
39) B	89) C	
40) C	90) B	
41) A	91) D	
42) B	92) E	
43) D	93) A	
44) E	94) B	
45) B	95) A	
46) D	96) B	
47) A	97) B	
48) B	98) C	
49) D	99) D	
50) B	100) C	

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