Student name:\_\_\_\_\_\_\_\_\_\_

**TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.  
1)** Scarcity results when available resources cannot satisfy all desired uses of those resources.

⊚ true  
 ⊚ false

**2)** Critics of government regulation argue that government interference in the marketplace stifles the "animal spirits" of entrepreneurship.

⊚ true  
 ⊚ false

**3)** Opportunity cost is a theoretical concept with no practical application.

⊚ true  
 ⊚ false

**4)** Every time we use scarce resources in one way, we give up the opportunity to use them in other ways.

⊚ true  
 ⊚ false

**5)** Production possibilities in an economy decrease as more resources and better technology are utilized.

⊚ true  
 ⊚ false

**6)** All output combinations that lie outside a production possibilities curve are attainable with available resources and technology.

⊚ true  
 ⊚ false

**7)** Output combinations that lie inside the production possibilities curve are characterized by efficient use of resources.

⊚ true  
 ⊚ false

**8)** If the economy is inside the production possibilities curve, then more output can be produced using existing resources.

⊚ true  
 ⊚ false

**9)** All economies must make decisions concerning what to produce, how to produce it, and for whom to produce.

⊚ true  
 ⊚ false

**10)** The essential feature of the market mechanism is the price signal.

⊚ true  
 ⊚ false

**11)** Government failure occurs when government intervention fails to improve economic outcomes or makes them worse.

⊚ true  
 ⊚ false

**12)** Microeconomics is concerned with individual performance as well as the economy as a whole.

⊚ true  
 ⊚ false

**13)** The Latin phrase *ceteris paribus* refers to holding other variables constant.

⊚ true  
 ⊚ false

**14)** To calculate the slope of a line, find the vertical distance between two points and divide it by the horizontal distance between the same two points.

⊚ true  
 ⊚ false

**15)** The slope of a production possibilities curve is positive.

⊚ true  
 ⊚ false

**16)** When a curve shifts, the underlying relationship between the two variables has changed.

⊚ true  
 ⊚ false

**MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.  
17)** Which of the following is not one of the three core economic issues that must be resolved?

A) how to produce the goods and services we select   
 B) what to produce with unlimited resources  
 C) who should get the goods and services we produce  
 D) what to produce with limited resources

**18)** The fundamental problem of economics is

A) the law of increasing opportunity costs.   
 B) the scarcity of resources relative to human wants.  
 C) how to get government to operate efficiently.  
 D) how to create employment for everyone.

**19)** In economics, scarcity means that

A) a shortage of a particular good will cause the price to fall.   
 B) a production possibilities curve cannot accurately represent the trade-off between two goods.  
 C) society's desires exceed resources available.  
 D) the market mechanism has failed.

**20)** Given that resources are scarce,

A) a "free lunch" is possible, but only for a limited number of people.   
 B) opportunity costs are experienced whenever choices are made.  
 C) poor countries must make choices, but rich countries with abundant resources do not have to make choices.  
 D) some choices involve opportunity costs while other choices do not.

**21)** The fact that there are too few resources to satisfy all our wants is attributed to

A) scarcity.   
 B) greed.  
 C) shortages.  
 D) lack of money.

**22)** There is no such thing as a free lunch because

A) the producer must charge something to cover the cost of production.   
 B) resources used to produce the lunch could be used to produce other goods and services.  
 C) the government must raise taxes to pay for the lunches.  
 D) no one would pay for lunch anymore if they could get it for free.

**23)** A consequence of the economic problem of scarcity is that

A) choices must be made about how resources are used.   
 B) there is never too much of any good or service produced.  
 C) the production of goods and services must be controlled by the government.  
 D) the production possibilities curve is bowed outward.

**24)** The basic factors of production include

A) land, labor, money, and capital.   
 B) land, labor, money, and inputs.  
 C) labor and money.  
 D) land, labor, capital, and entrepreneurship.

**25)** Factors of production are

A) scarce in every society.   
 B) scarce only in advanced countries.  
 C) scarce only in the poorest countries of the world.  
 D) unlimited in quantity.

**26)** Which of the following is *not* a factor of production?

A) a psychiatrist   
 B) $100,000 cash  
 C) a bulldozer  
 D) six thousand acres of farmland

**27)** With respect to factors of production, which of the following statements is not true?

A) Factors of production are also known as resources.   
 B) To produce any good or service, it is necessary to have factors of production.  
 C) Factors of production include land, labor, capital, and entrepreneurship.  
 D) Only those resources that are privately owned are counted as factors of production.

**28)** Which of the following is the best example of land?

A) the ethanol refined from corn   
 B) a factory that produces new goods and services  
 C) the water used to make a soft drink  
 D) a barber's chair

**29)** Which of the following is the best example of entrepreneurship?

A) The oil reserves of a nation.   
 B) The increased speed employees have gained from performing a job for a while.  
 C) An individual developing a unique production technique.  
 D) The fishing nets used by farmers in Thailand.

**30)** Capital, as economists use the term, refers to

A) the cash needed to start a new business.   
 B) the costs of operating a business.  
 C) shares of stock issued by businesses.  
 D) final goods that are used to produce other goods and services.

**31)** Which economist argued that free markets unleashed the "animal spirits" of entrepreneurs, propelling innovation, technology, and growth?

A) Lord Kelvin   
 B) Kenneth Olsen  
 C) Irving Fisher  
 D) John Maynard Keynes

**32)** The role of the entrepreneur in an economy is to

A) bring the factors of production together and assume the risk of production.   
 B) work with government planners to determine what goods are produced.  
 C) arrange bank financing for the owners of new businesses.  
 D) ensure full employment of labor.

**33)** Economics can be defined as the study of

A) for whom resources are allocated to increase efficiency.   
 B) how society spends the income of individuals.  
 C) how scarce resources are allocated.  
 D) how governments allocate scarce resources in all command economies.

**34)** Opportunity cost is

A) measured only in dollars and cents.   
 B) the total dollar cost to society of producing the goods.  
 C) the difficulty associated with using one good in place of another.  
 D) what is given up in order to get something else.

**35)** Opportunity cost may be defined as the

A) goods or services that are forgone in order to obtain something else.   
 B) dollar prices paid for final goods and services.  
 C) dollar cost of producing a particular product.  
 D) difference between wholesale and retail prices.

**36)** The opportunity cost of studying for an economics test is

A) negative because it may improve your grade.   
 B) zero because you knew when you registered for the class that studying would be required.  
 C) the money you spent on tuition for the class.  
 D) the activity that is the best alternative use of your time.

**37)** The "guns versus butter" dilemma that all nations confront is that

A) guns and butter can be produced using the same resources at the same time.   
 B) an increase in national defense implies more sacrifices of civilian goods and services.  
 C) an increase in national defense is possible only if we produce more butter.  
 D) only guns and butter can be produced in developing economies.

**38)** A production possibilities curve indicates the

A) combinations of goods and services an economy is producing.   
 B) maximum combinations of goods and services an economy can produce given its available resources and technology.  
 C) maximum combinations of goods and services an economy can produce given unlimited resources.  
 D) average combinations of goods and services an economy can produce given its available resources and technology.

**39)** Which of the following is an assumption under which the production possibilities curve is drawn?

A) Total unemployment is zero.   
 B) The supply of resources is fixed.  
 C) The price level is changing.  
 D) Technology is changing.

**40)** A point on a nation's production possibilities curve represents

A) an undesirable combination of goods and services.   
 B) combinations of production that are unattainable, given current technology and resources.  
 C) levels of production that will cause both unemployment and inflation.  
 D) the full employment of resources to achieve a particular combination of goods and services.

**41)** The production possibilities curve illustrates which two of the following essential principles?

A) factors of production and price signals   
 B) scarce resources and opportunity cost  
 C) market mechanisms and laissez-faire  
 D) economic growth and market failure

**42)** If an economy experiences constant opportunity costs with respect to two goods, then the production possibilities curve between the two goods will be

A) bowed outward or concave from below.   
 B) a straight, downward-sloping line.  
 C) bowed inward or convex from below.  
 D) bowed outward until the two goods are equal, and then bowed inward.

**43)** The production possibilities curve illustrates

A) the limitations that exist because of scarce resources.   
 B) that there is no limit to what an economy can produce.  
 C) that there is no limit to the level of output.  
 D) the existence of unlimited wants and resources.

**44)** According to the law of increasing opportunity costs,

A) the more one is willing to pay for resources; the smaller will be the possible level of production.   
 B) increasing the production of a particular good will cause the price of the good to remain constant.  
 C) in order to produce additional units of a particular good, it is necessary for society to sacrifice increasingly larger amounts of alternative goods.  
 D) prices will always increase as production levels rise.

**45)** According to the law of increasing opportunity costs,

A) greater production leads to greater inefficiency.   
 B) greater production means factor prices rise.  
 C) greater production of one good requires increasingly larger sacrifices of other goods.  
 D) higher opportunity costs induce higher output per unit of input.

**46)** If an economy experiences increasing opportunity costs with respect to two goods, then the production possibilities curve between the two goods will be

A) bowed outward with respect to the origin.   
 B) a straight, downward-sloping line.  
 C) bowed inward with respect to the origin.  
 D) bowed outward with respect to the origin until the two goods are equal, and then bowed inward.

**47)** If a production possibilities curve between tanks and trucks has increasing opportunity cost, producing more tanks

A) lowers the cost of each individual tank.   
 B) can be done at a constant opportunity cost.  
 C) requires us to give up larger and larger amounts of trucks per tank produced.  
 D) is not possible due to scarcity.

**48)** If the United States decides to convert automobile factories to tank production, as it did during World War II, but finds that some auto manufacturing facilities are not well suited to tank production, then

A) the production possibilities curve between tanks and automobiles will appear as a straight line.   
 B) the production possibilities curve between tanks and automobiles will shift outward.  
 C) decreasing opportunity costs will occur with greater automobile production.  
 D) increasing opportunity costs will occur with greater tank production.

**49)** If North Korea is currently producing at efficiency and it proceeds to increase the size of its military, then, if nothing else changes,

A) production possibilities curve will shift outward.   
 B) production possibilities curve will shift inward.  
 C) production of nonmilitary goods will increase.  
 D) production of nonmilitary goods will decrease.

**50)** When an economy is producing efficiently, it is

A) producing a combination of goods and services beyond the production possibilities curve.   
 B) getting the maximum goods and services possible from the available resources.  
 C) experiencing decreasing opportunity costs.  
 D) producing equal amounts of all goods.

**51)** Which of the following is true when an economy is producing efficiently?

A) The economy is producing on the production possibilities curve.   
 B) The economy is producing outside the production possibilities curve.  
 C) The economy is getting the fewest goods and services from the available resources.  
 D) Everyone in the economy is happy.

**52)** The points on a production possibilities curve show

A) desired output.   
 B) actual output.  
 C) potential output.  
 D) inefficient output.

**53)** In terms of the production possibilities curve, inefficiency is represented by

A) all points on the curve.   
 B) all points outside the curve.  
 C) all points inside the curve.  
 D) a rightward shift of the curve.

**54)** If an economy is producing inside the production possibilities curve, then

A) there is full employment of resources.   
 B) it is operating efficiently.  
 C) it can produce more of one good without giving up some of another good.  
 D) there are not enough resources available to produce more output.

**55)** Producing at a point inside the production possibilities curve

A) means society must be using its resources efficiently.   
 B) is unattainable given the present level of technology.  
 C) is feasible when the nation is at war but not feasible when the nation is at peace.  
 D) suggests we are forgoing the ability to produce more of both goods.

**56)** A technological advance would best be represented by

A) a shift outward of the production possibilities curve.   
 B) a shift inward of the production possibilities curve.  
 C) a movement from inside the production possibilities curve to a point on the production possibilities curve.  
 D) a movement from the production possibilities curve to a point inside the production possibilities curve.

**57)** Which of the following events would allow the production possibilities curve to shift outward?

A) The economy's capital stock declines.   
 B) More teenagers enter the labor force.  
 C) Technology is lost.  
 D) People begin to retire at earlier ages.

**58)** Economic growth would best be represented by a

A) shift outward of the production possibilities curve.   
 B) shift inward of the production possibilities curve.  
 C) movement from inside the production possibilities curve to a point on the production possibilities curve.  
 D) movement from the production possibilities curve to a point inside the production possibilities curve.

**59)** Which of the following will cause the production possibilities curve to shift inward?

A) an increase in the working-age population   
 B) a decrease in the size of the labor force  
 C) a technological advance  
 D) an increase in knowledge

**60)** Which of the following is *not* a basic decision that all nations must confront?

A) Should we have economic growth?   
 B) How should we produce goods and services?  
 C) For whom should goods and services be produced?  
 D) What goods and services should we produce?

**61)** In a market economy, the people who receive the goods and services that are produced are those who

A) need the goods and services the most.   
 B) have the most political power.  
 C) want the goods and services the most.  
 D) are willing to pay the highest price.

**62)** Adam Smith's invisible hand is now called

A) economic growth.   
 B) the market mechanism.  
 C) opportunity cost.  
 D) laissez-faire.

**63)** The market mechanism may best be defined as

A) the use of market prices and sales to signal desired output.   
 B) the use of market signals and government directives to select economic outcomes.  
 C) the process by which the production possibilities curve shifts inward.  
 D) price regulation by government.

**64)** The market mechanism

A) is not a very efficient means of communicating consumer demand to the producers of goods and services.   
 B) works through central planning by government.  
 C) eliminates market failures created by government.  
 D) works because prices serve as a means of communication between consumers and producers.

**65)** The invisible hand refers to

A) intervention in the economy by the government bureaucrats we do not see and over whom we have no control.   
 B) undiscovered natural resources.  
 C) the allocation of resources by market forces.  
 D) the person who has the responsibility to coordinate all the markets in a market economy.

**66)** The doctrine of laissez-faire is based on the belief that

A) markets are likely to do a better job of allocating resources than government directives.   
 B) government directives are likely to do a better job of allocating resources than markets.  
 C) government failure does not exist.  
 D) markets result in an unfair distribution of income.

**67)** A city's decision to limit smoking in public areas is an example of

A) the invisible hand at work.   
 B) the market mechanism at work.  
 C) market success.  
 D) government intervention.

**68)** A mixed economy

A) Is justified by the superiority of laissez-faire over government intervention.   
 B) utilizes both market and nonmarket signals to allocate goods and services.  
 C) relies on the use of central planning by private firms rather than the government.  
 D) is one that allows trade with other countries.

**69)** Which of the following may be used to correct market failure?

A) the market mechanism   
 B) laws and regulations  
 C) laissez-faire price policies  
 D) government failure

**70)** When the invisible hand does not produce optimal outcomes for the economy, there is evidence of

A) market failure.   
 B) government failure.  
 C) macroeconomic failure.  
 D) scarcity.

**71)** Government intervention may achieve a more optimal outcome than the market mechanism when addressing

A) inefficient bureaucracy.   
 B) consumption of cigarettes.  
 C) the supply of new hot dog stands.  
 D) government failure.

**72)** If market signals result in pollution beyond the optimal level, then

A) the economy experiences government failure.   
 B) a laissez-faire approach will reduce the level of pollution.  
 C) the market mechanism has failed to achieve optimal outcomes.  
 D) the government is allocating resources inefficiently.

**73)** Which of the following has occurred when government directives do not produce better economic outcomes?

A) government failure   
 B) market failure  
 C) macroeconomic failure  
 D) scarcity

**74)** Which of the following is *not* an example of government failure?

A) bureaucratic delays   
 B) required use of pollution control technology that is obsolete  
 C) inefficient incentives  
 D) efficient incentives

**75)** Macroeconomics focuses on the behavior of

A) individual consumers.   
 B) government agencies.  
 C) the overall economy.  
 D) a specific market.

**76)** Which of the following is *not* a macroeconomic statement?

A) The unemployment rate for the United States rose to 5 percent in the last quarter.   
 B) The Federal Reserve lowered interest rates at its last meeting.  
 C) Congress increased the minimum wage rate in January.  
 D) Jenny's wage rate rose and, in response, she decided to work more hours.

**77)** Which of the following is NOT a macroeconomic statement?

A) The unemployment rate for the United States rose to 5 percent in the last quarter.   
 B) The Federal Reserve lowered interest rates at its last meeting.  
 C) Congress increased the minimum wage rate in January.  
 D) Jenny's wage rate rose and, in response, she decided to work more hours.

**78)** The study of microeconomic theory focuses on

A) individual behavior in the economy   
 B) the operation of the entire economy.  
 C) the role of the banking system in the economy.  
 D) the interaction of international trade and domestic production of goods and services.

**79)** Microeconomics is concerned with issues such as

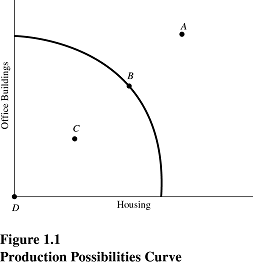
A) the demand for bottled water by individuals.   
 B) the level of inflation in the economy.  
 C) maintaining a strong level of economic growth.  
 D) the current level of unemployment.

**80)** Economic models are used by economists to do each of the following *except*

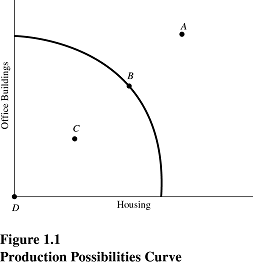
A) predict economic behavior.   
 B) develop economic policies.  
 C) explain economic behavior.  
 D) force people to behave a certain way.

**81)** The Latin phrase *ceteris paribus* means

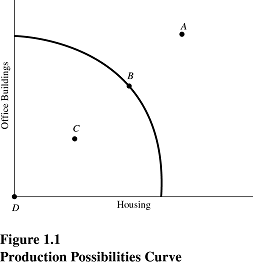
A) the production possibilities curve never shifts.   
 B) laissez-faire.  
 C) other things remain equal.  
 D) the invisible hand.

**82)**   
 (Figure 1.1) At which point is society employing some of its available technology, but not all of it?

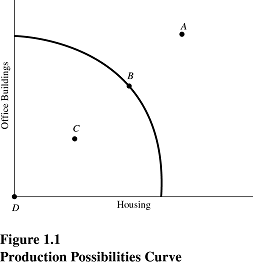
A) A   
 B) B  
 C) C  
 D) D

**83)**   
 (Figure 1.1) At which point is society producing the most output possible with the available resources and technology?

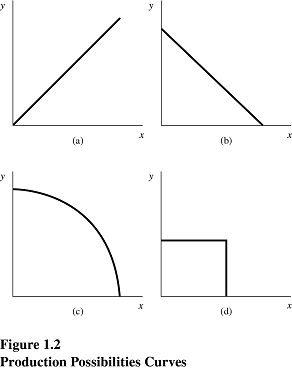
A) A   
 B) B  
 C) C  
 D) D

**84)**   
 (Figure 1.1) At which point is society producing some of each type of structure but still producing inefficiently?

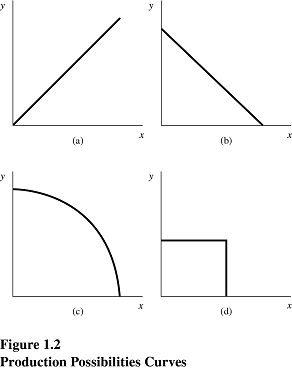
A) A   
 B) B  
 C) C  
 D) D

**85)**   
 (Figure 1.1) At which point might society be able to produce if new resources were discovered but cannot produce with current resources?

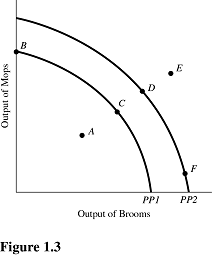
A) A   
 B) B  
 C) C  
 D) D

**86)**   
 (Figure 1.2) Which panel best represents a production possibilities curve for two goods that obey the law of increasing opportunity costs?

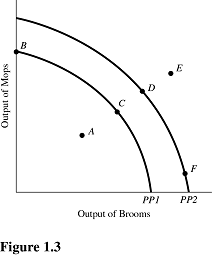
A) A   
 B) B  
 C) C  
 D) D

**87)**   
 (Figure 1.2) Which panel best represents a production possibilities curve for two goods for which there are constant opportunity costs?

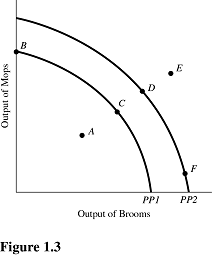
A) A   
 B) B  
 C) C  
 D) D

**88)**   
 (Figure 1.3) Starting from PP1, an increase in the capacity to produce can be represented by a movement from

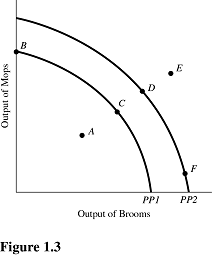
A) point A to point B.   
 B) point A to point C.  
 C) point B to point C.  
 D) point C to point F.

**89)**   
 (Figure 1.3) At point A,

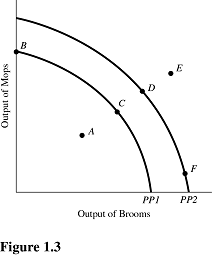
A) there is inefficient use of available resources.   
 B) the available technology keeps production inside PP1.  
 C) all available resources are being used efficiently.  
 D) an increase in the production of mops would definitely require a decrease in the production of brooms.

**90)**   
 (Figure 1.3) Which of the following is true about the combination of mops and brooms represented by point E?

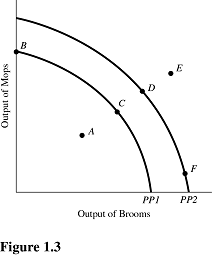
A) Point E is efficient now.   
 B) Point E is attainable if this economy uses more of its available resources.  
 C) Point E is unattainable if this economy becomes more efficient.  
 D) Point E is attainable only if more resources become available or technological advances are made.

**91)**   
 (Figure 1.3) An increase in the proportion of the population that is unemployed above the normal rate is best represented by a movement from

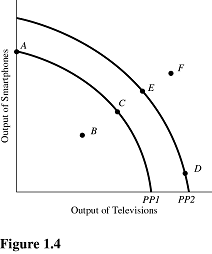
A) point C to point D.   
 B) point D to point C.  
 C) point C to point A.  
 D) point E to point D.

**92)**   
 (Figure 1.3) A movement from point F to point D results in

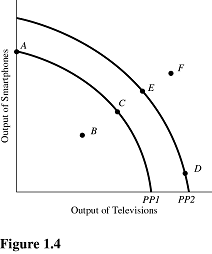
A) a reallocation of resources from mop production to broom production.   
 B) permanent unemployment of workers producing brooms.  
 C) a reallocation of resources from broom production to mop production.  
 D) more efficient production.

**93)**   
 (Figure 1.3) A shift of the production possibilities curve from PP1 to PP2 could be caused by

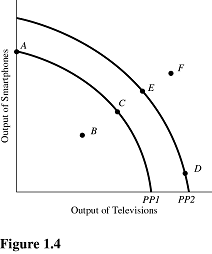
A) a decrease in the quantity of raw materials available.   
 B) a decline in the production skills of workers.  
 C) the use of improved production technology.  
 D) a natural disaster that destroys infrastructure.

**94)**   
 (Figure 1.4) Starting at PP1, an increase in the capacity to produce can be represented by a movement from point

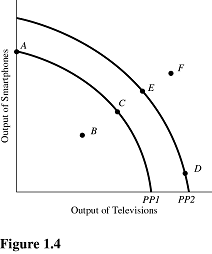
A) A to point B.   
 B) C to point E.  
 C) A to point C.  
 D) D to point E.

**95)**   
 (Figure 1.4) Which of the following is true about the combination of televisions and smartphones represented by point F?

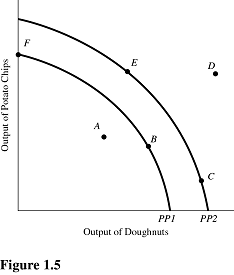
A) Point F is inefficient now.   
 B) Point F is unattainable even with advances in technology.  
 C) Point F will be more easily attainable if the government takes control of all privately run factories.  
 D) Point F can possibly be reached if more economic resources become available or technology improves.

**96)**   
 (Figure 1.4) A movement from point C to point A results in

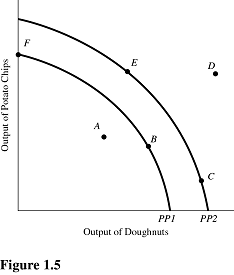
A) more efficient production.   
 B) permanent unemployment of workers producing plasma televisions.  
 C) a reallocation of resources from smartphone production to television production.  
 D) a reallocation of resources from television production to smartphone production.

**97)**   
 (Figure 1.4) A shift of the production possibilities curve from PP1 to PP2 could be caused by

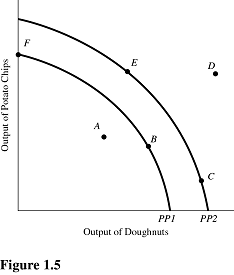
A) an increase in the unemployment rate.   
 B) implementation of training programs that improve the skills of workers.  
 C) a flu epidemic that makes many workers sick.  
 D) tougher pollution controls for the producers of televisions and smartphones.

**98)**   
 (Figure 1.5) If an economy has the capacity to produce represented by PP2, then point E represents

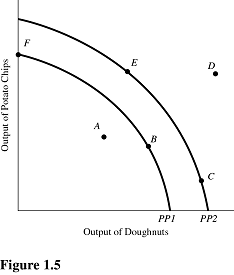
A) a constant trade-off between potato chips and doughnuts.   
 B) a combination of potato chips and doughnuts that is not attainable.  
 C) an efficient use of resources.  
 D) an inefficient use of resources.

**99)**   
 (Figure 1.5) If an economy has the capacity to produce represented by PP2, then point C represents:

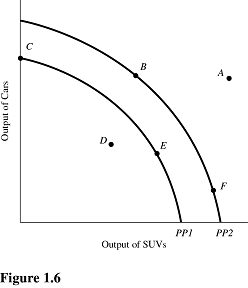
A) A constant trade-off between potato chips and doughnuts.   
 B) A combination of potato chips and doughnuts that is not attainable.  
 C) An efficient use of resources.  
 D) An inefficient use of resources.

**100)**   
 (Figure 1.5) If an economy is currently producing on PP2, which of the following would shift the production possibilities curve toward PP1?

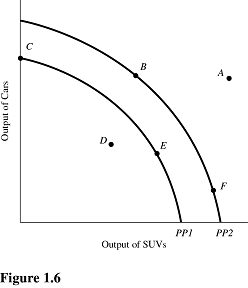
A) an increase in the quantity of labor available   
 B) a decrease in the amount of capital available  
 C) a decrease in the level of unemployment toward the normal level  
 D) an advancement in technology

**101)**   
 (Figure 1.5) At which of the following points would the opportunity cost of producing more doughnuts be greatest?

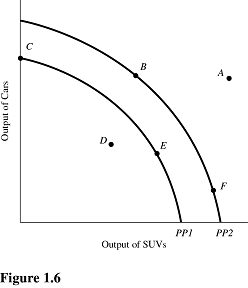
A) A   
 B) F  
 C) C  
 D) E

**102)**   
 (Figure 1.6) If an economy has the capacity to produce represented by PP1, then point E represents

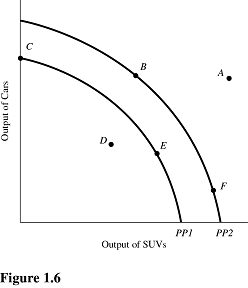
A) a combination of cars and SUVs that is not attainable.   
 B) a constant trade-off between cars and SUVs.  
 C) a change in technology.  
 D) an efficient use of resources.

**103)**   
 (Figure 1.6) If the opportunity cost of producing cars was zero at all levels of production, the production possibilities curve would be best be represented by a

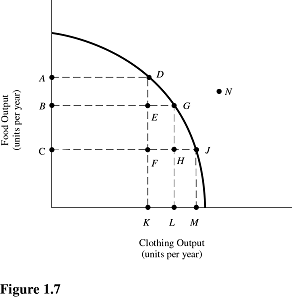
A) vertical line.   
 B) 45-degree line starting at the origin.  
 C) horizontal line.  
 D) circle.

**104)**   
 (Figure 1.6) At which of the following points would the opportunity cost of producing one more car be the lowest?

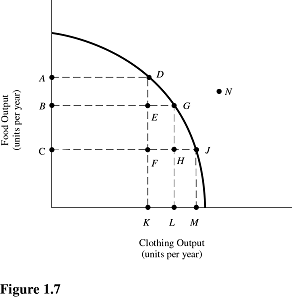
A) F   
 B) B  
 C) C  
 D) D

**105)**   
 (Figure 1.6) At which of the following points would the opportunity cost of producing one more SUV be highest?

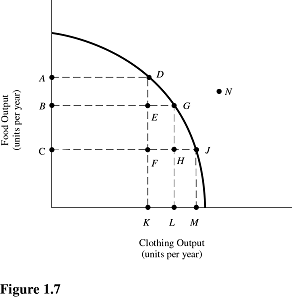
A) A   
 B) B  
 C) C  
 D) F

**106)**   
 (Figure 1.7) This economy will achieve efficiency in production at

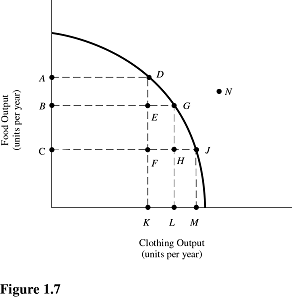
A) point D only.   
 B) point G only.  
 C) point J only.  
 D) points D, G, and J.

**107)**   
 (Figure 1.7) The opportunity cost of changing production from J to D would be:

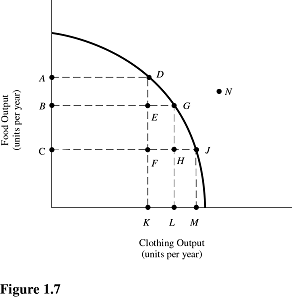
A) LM units of clothing.   
 B) KL units of clothing.  
 C) M units of clothing.  
 D) KM units of clothing.

**108)**   
 (Figure 1.7) The cost of producing at point G rather than point D is

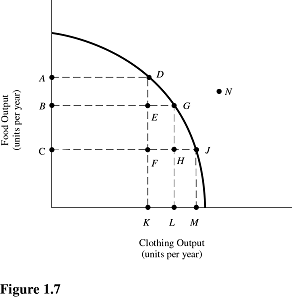
A) A units of food   
 B) KL units of clothing  
 C) AB units of food  
 D) L units of clothing

**109)**   
 (Figure 1.7) The benefit of producing at point G rather than point D is

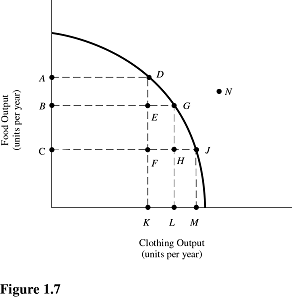
A) OA units of food.   
 B) KL units of clothing.  
 C) AB units of food.  
 D) OL units of clothing.

**110)**   
 (Figure 1.7) The cost of producing at point D rather than point J is

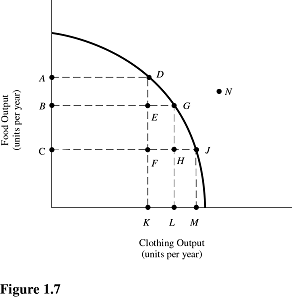
A) KM units of clothing.   
 B) AC units of food.  
 C) OM units of clothing.  
 D) OA units of food.

**111)**   
 (Figure 1.7) If this economy is currently producing at point F, then by employing more resources this economy

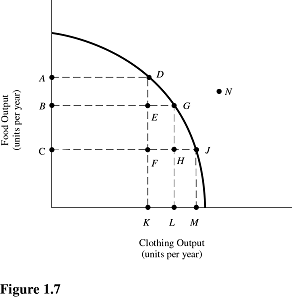
A) can move to point D, but not points G or J.   
 B) can move to points D, G, or J.  
 C) can move to point G, but not points D or J.  
 D) will remain at point F.

**112)**   
 (Figure 1.7) Which of the following points is considered to be inefficient?

A) D   
 B) E  
 C) G  
 D) D, G, and J

**113)**   
 (Figure 1.7) Which of the following points is unattainable, *ceteris paribus*?

A) G   
 B) F  
 C) N  
 D) E

**114)**   
 (Figure 1.7) Which of the following points show unemployment of resources above the normal rate?

A) H   
 B) J  
 C) N  
 D) D

**115)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus*.  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) You may infer that the law of increasing opportunity costs applies to increasing production of

A) Stealth Bombers but not to B-1 Bombers.   
 B) B-1 Bombers.  
 C) both B-1 Bombers and Stealth Bombers.  
 D) neither B-1 Bombers nor Stealth Bombers.

**116)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) What is the opportunity cost of producing at point S rather than point T?

A) 1 Stealth Bomber   
 B) 1 B-1 Bomber  
 C) 10 Stealth Bombers  
 D) 0.9 Stealth Bombers

**117)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) What is the opportunity cost of producing at point V rather than point U?

A) 3 B-1 Bombers   
 B) 1 B-1 Bomber  
 C) 4 Stealth Bombers  
 D) 3 Stealth Bombers

**118)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) In the production range of 7 to 9 Stealth bombers, the opportunity cost of producing 1 more Stealth Bomber in terms of B-1 Bombers is

A) 0.   
 B) 3.  
 C) 0.5.  
 D) 2.

**119)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) The highest opportunity cost for Stealth Bombers in terms of B-1 Bombers is

A) 1 B-1 Bomber.   
 B) 3 B-1 Bombers.  
 C) 2 B-1 Bombers.  
 D) 0.5 B-1 Bombers.

**120)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) The highest opportunity cost for B-1 Bombers in terms of Stealth Bombers is

A) 1 Stealth Bomber.   
 B) 3 Stealth Bombers.  
 C) 2 Stealth Bombers.  
 D) 0.5 Stealth Bomber.

**121)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) The lowest opportunity cost for B-1 Bombers in terms of Stealth Bombers is

A) 0 Stealth Bombers.   
 B) 2 Stealth Bombers.  
 C) 1 Stealth Bomber.  
 D) 0.5 Stealth Bombers.

**122)** Table 1.1 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.1  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **S** | 0 | NA | 10 |  |
| **T** | 1 |  | 9 |  |
| **U** | 2 |  | 7 |  |
| **V** | 3 |  | 4 | NA |

(Table 1.1) The lowest opportunity cost for Stealth Bombers in terms of B-1 Bombers is

A) 1 B-1 Bomber.   
 B) 2 B-1 Bombers.  
 C) 1/3 B-1 Bombers.  
 D) 1/2 B-1 Bombers.

**123)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) The law of increasing opportunity costs applies to

A) both B-1 Bombers and Stealth Bombers.   
 B) B-1 Bombers.  
 C) Stealth Bombers but not to B-1 Bombers.  
 D) neither Stealth nor B-1 Bombers.

**124)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) If the economy is currently producing at point C, what is the opportunity cost of producing at point B?

A) 45 B-1 Bombers   
 B) 35 Stealth Bombers  
 C) 180 Stealth Bombers  
 D) 10 B-1 Bombers

**125)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) What is gained by producing at point B rather than point C?

A) 45 B-1 Bombers   
 B) 30 Stealth Bombers  
 C) 180 Stealth Bombers  
 D) 10 B-1 Bombers.

**126)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) What is gained by producing at point B rather than point A?

A) 35 B-1 Bombers   
 B) 195 Stealth Bombers  
 C) 15 B-1 Bombers  
 D) 15 Stealth Bombers

**127)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) In the production range of 20 to 35 B-1 Bombers, the opportunity cost of producing 1 more B-1 Bomber is

A) 195/20 of Stealth Bombers.   
 B) 35/20 of Stealth Bombers.  
 C) 15 Stealth Bombers.  
 D) 1 Stealth Bomber.

**128)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) In the production range of 20 to 35 B-1 Bombers, the opportunity cost of producing 1 more Stealth Bomber is

A) 195/20 of B-1 Bombers.   
 B) 35/20 of B-1 Bombers.  
 C) 15 B-1 Bombers.  
 D) 1 B-1 Bomber.

**129)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.* Complete the table by calculating the required opportunity costs for both the B-1 and Stealth Bombers.  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) The highest opportunity cost for B-1 Bombers in terms of Stealth Bombers is

A) 33 Stealth Bombers.   
 B) 20 Stealth Bombers.  
 C) 10 Stealth Bombers.  
 D) 5 Stealth Bombers.

**130)** Table 1.2 shows the hypothetical trade-off between different combinations of Stealth Bombers and B-1 Bombers that might be produced in a year with the limited U.S. capacity, *ceteris paribus.*  
 Table 1.2  
 Production Possibilities for Bombers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost**  **(Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost**  **(Foregone B-1)** |
| **A** | 20 | NA | 195 |  |
| **B** | 35 |  | 180 |  |
| **C** | 45 |  | 150 |  |
| **D** | 50 |  | 100 | NA |

(Table 1.2) The lowest opportunity cost for Stealth Bombers is

A) 10 B-1 Bombers.   
 B) 1 B-1 Bomber.  
 C) 1/2 B-1 Bombers.  
 D) 1/10 B-1 Bombers.

**131)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) What is the opportunity cost of producing at point M rather than point N?

A) 23 combs   
 B) 21 combs  
 C) 1 brush  
 D) 2 brushes

**132)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited cap acity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) What is gained by producing at point M rather than point N?

A) 23 combs   
 B) 21 combs  
 C) 1 comb  
 D) 2 combs

**133)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
   
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) What is gained from producing at point L rather than point K?

A) 17 combs   
 B) 10 combs  
 C) 1 brush  
 D) 7 brushes

**134)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) The law of increasing opportunity costs applies to

A) both brushes and combs.   
 B) combs but not brushes.  
 C) brushes but not combs.  
 D) neither brushes nor combs.

**135)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) In the production range of 2 to 3 combs, the opportunity cost of producing 1 more comb (in terms of brushes) is

A) 3.33.   
 B) 7.0.  
 C) 0.67.  
 D) 0.14.

**136)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) In the production range of 21 to 23 brushes, the opportunity cost of producing 1 more comb (in terms of brushes) is

A) 1/21.   
 B) 21/23.  
 C) 2.0  
 D) 4.

**137)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) In the production range of 1 to 2 combs, the opportunity cost of producing 1 more comb (in terms of brushes) is

A) 4.   
 B) 1/2.  
 C) 2/17.  
 D) 1/7.

**138)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) The highest opportunity cost for brushes (in terms of combs) is

A) 0.10 comb per brush.   
 B) 23 combs per brush.  
 C) 0.50 comb per brush.  
 D) 0.29 comb per brush.

**139)** Table 1.3 shows the hypothetical trade-off between different combinations of brushes and combs that might be produced in a year with the limited capacity for Country X, *ceteris paribus*.  
 Table 1.3  
 Production Possibilities for Brushes and Combs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 |  |
| **K** | 10 |  | 3 |  |
| **L** | 17 |  | 2 |  |
| **M** | 21 |  | 1 |  |
| **N** | 23 |  | 0 | NA |

(Table 1.3) The lowest opportunity cost for combs in terms of brushes is

A) 10 brushes per comb.   
 B) 2 brushes per comb.  
 C) 0.33 brush per comb.  
 D) 8.5 brushes per comb.

**140)** Refer to the World View article titled "North Korea’s Food Shortage Grows." On a production possibilities curve between private and public goods, a decrease in military spending in an effort to increase food production could be represented as

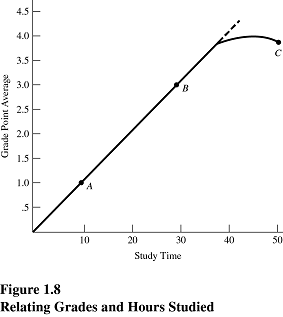
A) a movement along the production possibilities curve toward more public goods.   
 B) a movement along the production possibilities curve toward more private goods.  
 C) a shift outward of the production possibilities curve.  
 D) a shift inward of the production possibilities curve.

**141)** Refer to the World View article titled "North Korea Resumes Missile Launches.” If North Korea increases the size of its military and produces less food, this is most consistent with

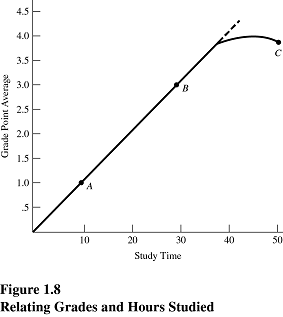
A) a movement along the economy's production possibilities curve.   
 B) privatization.  
 C) a laissez-faire policy.  
 D) the law of increasing opportunity costs.

**142)** In discussing the challenges of converting to cleaner energy, one issue is that the percentage of electricity generated from burning oil and coal in the United States is

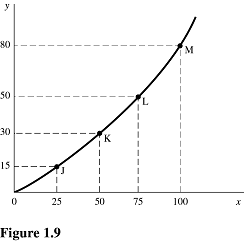
A) less than 10 percent.   
 B) between 10 and 30 percent.  
 C) between 30 and 50 percent.  
 D) greater than 50 percent.

**143)**   
 (Figure 1.8) This figure suggests that

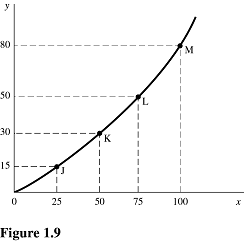
A) the law of increasing opportunity cost does not apply.   
 B) resources can be perfectly adapted between study time and grade point average.  
 C) the relationship between study time and grade point average is first linear, then nonlinear.  
 D) the relationship between study time and grade point average is constant.

**144)**   
 (Figure 1.8) If the university decides to lower grading standards, then

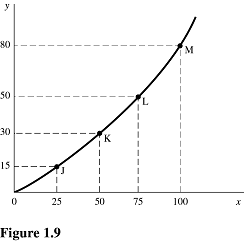
A) this curve will shift rightward.   
 B) this curve will shift to the left.  
 C) the curve will begin to bend downward at an earlier point.  
 D) we will slide up the curve from point B to point C.

**145)**   
 (Figure 1.9) As you move up the curve from point J toward point M, the slope

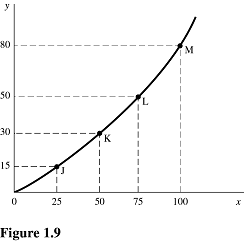
A) increases.   
 B) remains constant.  
 C) decreases.  
 D) becomes negative.

**146)**   
 (Figure 1.9) The slope of the line between points L and M is:

A) 1.20.   
 B) 0.80.  
 C) 0.75.  
 D) 0.67.

**147)**   
 (Figure 1.9) The slope of the line between points K and L is

A) 1.25.   
 B) 0.80.  
 C) 0.75.  
 D) 0.60.

**148)**   
 (Figure 1.9) The slope of the line is

A) greater at point K than point L.   
 B) equal to zero at all points.  
 C) greater at point M than point L.  
 D) smaller at point M than point L.

**149)** The slope of a curve at any point is given by which formula?

A) the change in y coordinates between two points divided by the change in their x coordinates   
 B) the change in x coordinates between two points divided by the change in their y coordinates  
 C) the percentage change in y coordinates between two points divided by the percentage change in their x coordinates  
 D) the percentage change in x coordinates between two points divided by the percentage change in their y coordinates

**150)** A line that slopes downward from left to right has a

A) negative slope.   
 B) positive slope.  
 C) slope that changes as you move along the curve.  
 D) slope of zero.

**151)** A linear function can be distinguished by

A) the continuous change in its slope.   
 B) the same slope throughout the line.  
 C) the changing relationship between the two variables.  
 D) a shift in the function.

**152)** When the relationship between two variables changes,

A) there is movement from one point on the curve to another point on the curve.   
 B) the curve becomes linear.  
 C) the entire curve shifts.  
 D) the curve will be upward sloping.

**153)** Table 1.4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Good 1** | **Opportunity Cost (Foregone Good 2)** | **Number of Good 2** | **Opportunity Cost (Foregone Good 1)** |
| A | 0 | NA | 226 | 6.17 |
| B | 111 | 0.16 | 208 | 1.40 |
| C | 199 | 0.72 | 145 | 0.03 |
| D | 203 | 36.25 | 0 | NA |

What is the opportunity cost of each unit of Good 1 when the economy changes production from A to B?

A) 0.16 units of Good 2.   
 B) 0.72 units of Good 2.  
 C) 6.17 units of Good 2.  
 D) 1.4 units of Good 2.

**154)** Table 1.4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Good 1** | **Opportunity Cost (Foregone Good 2)** | **Number of Good 2** | **Opportunity Cost (Foregone Good 1)** |
| A | 0 | NA | 327 | 12.33 |
| B | 148 | 0.08 | 315 | 0.72 |
| C | 233 | 1.39 | 197 | 0.09 |
| D | 250 | 11.59 | 0 | NA |

What is the opportunity cost of each unit of Good 1 when the economy changes production from B to C?

A) 1.39 units of Good 2.   
 B) 0.08 units of Good 2.  
 C) 12.33 units of Good 2.  
 D) 0.72 units of Good 2.

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.  
155)** Explain why an economist would say, "There is no such thing as a free lunch."

**156)** What is the opportunity cost of you attending class on a particular day? Explain your answer.

**157)** How does the slope of a production possibilities curve reflect opportunity costs?

**158)** Describe the shape of the typical production possibilities curve and explain why it has this shape.

**159)** Why do opportunity costs increase as society produces more of a good?

**160)** Explain the concept of inefficiency in terms of a production possibilities curve.

**161)** Explain the difference between macroeconomics and microeconomics. Give examples of each.

**162)** How does the market mechanism answer the *what*, *how*, and *for whom* questions?

**Answer Key**Test name: chapter 1

1) TRUE

2) TRUE

3) FALSE

4) TRUE

5) FALSE

6) FALSE

7) FALSE

8) TRUE

9) TRUE

10) TRUE

Prices guide buyers and sellers to achieve an optimal allocation of resources.

11) TRUE

12) FALSE

13) TRUE

14) TRUE

15) FALSE

16) TRUE

17) B

The basic questions of economics revolve around what to produce with limited resources, how to produce using those resources, and who should receive the resulting goods produced.

18) B

Economics attempts to address how to manage limited resources effectively to meet human wants.

19) C

Scarcity refers to how limited resources require society to consider how to best meet desire.

20) B

Because resources are limited, we must always make choices about how best to use them. Whenever we do, we give up the opportunity to use those resources differently and these represent opportunity costs.

21) A

Scarcity is a core problem of economics as it requires that we make choices about how best to use resources.

22) B

Even if there is no price, there is always an opportunity cost for every choice we make.

23) A

Scarcity is a core problem of economics as it requires that we make choices about how best to use resources.

24) D

The basic factors of production focus on nonmonetary inputs: land, labor, capital, and entrepreneurship. Money is not included because money is simply used to purchase or rent the basic factors of production.

25) A

All factors of production are scarce, which means we must choose how best to use them to meet society’s desires.

26) B

The basic factors of production focus on nonmonetary inputs: land, labor, capital, and entrepreneurship. Money is not included because money is simply used to purchase or rent the basic factors of production.

27) D

Factors of production are assumed to be owned by private firms and households.

28) C

Land refers to both the ground itself, as well as the natural resources it houses. In this case, water is the best example of a natural resource.

29) C

Entrepreneurship refers to the assembling of resources to produce new or improved products and technologies.

30) D

Capital refers to the final goods used to produce other goods. Capital may include completed buildings, machines, and tools, among others.

31) D

John Maynard Keynes argued that markets are effective primarily because of the animal spirit that propels innovation and technology so that the economy can expand its productive capacity.

32) A

Entrepreneurs are considered a factor of production because they help an economy combine land, labor, and capital in unique ways to produce unique goods and services. Doing so inherently brings risk.

33) C

Because resources are limited, we must always make choices about how best to use them. Economics is the study of how these choices are made.

34) D

Because resources are limited, we must always make choices about how best to use them. Whenever we do, we give up the opportunity to use those resources differently and these represent opportunity costs.

35) A

Because resources are limited, we must always make choices about how best to use them. Whenever we do, we give up the opportunity to use those resources differently and these represent opportunity costs.

36) D

Because resources are limited, we must always make choices about how best to use them. Whenever we do, we give up the opportunity to use those resources differently and these represent opportunity costs.

37) B

This dilemma is an analogy that highlights how societies often face a trade-off between military goods and civilian goods.

38) B

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology.

39) B

Because the production possibilities curve demonstrates the combinations of goods and services an economy can presently produce with its available resources and technology, the curve itself assumes that resources are not changing.

40) D

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Each point along the curve then represents a specific combination of goods and services produced at full employment.

41) B

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Because the line represents a maximum level of production possible, this reflects scarcity of resources, while the downward slope reflects the trade-offs and opportunity costs of converting production.

42) B

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. The curve?s slope indicates opportunity costs, so constant opportunity costs would be represented with a straight line.

43) A

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Because the line represents a maximum level of production possible, this reflects scarcity of resources, while the downward slope reflects the trade-offs and opportunity costs of converting production.

44) C

A production possibilities curve’s slope indicates opportunity costs, so increasing opportunity costs would be represented with a bowed line. As production of one good increases, the line would indicate that the economy would need to sacrifice greater amounts of alternative goods.

45) C

A production possibilities curve’s slope indicates opportunity costs, so increasing opportunity costs would be represented with a bowed line. As production of one good increases, the line would indicate that the economy would need to sacrifice greater amounts of alternative goods.

46) A

A production possibilities curve’s slope indicates opportunity costs, so increasing opportunity costs would be represented with a bowed line. As production of one good increases, the line would indicate that the economy would need to sacrifice greater amounts of alternative goods.

47) C

Increasing opportunity costs indicate that in order to produce more of something, we will have to sacrifice ever greater resources in order to expand production.

48) D

A production possibilities curve’s slope indicates opportunity costs, so increasing opportunity costs would be represented with a bowed line. As production of one good increases, the line would indicate that the economy would need to sacrifice greater amounts of alternative goods.

49) D

When producing along a production possibilities curve, the only way to expand production of one good or service would be to reduce production of an alternative.

50) B

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology.

51) A

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Because the curve represents the maximum level of production possible, production on the line implies that all possible resources are being used to produce that combination of goods and services.

52) C

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Points along the curve indicate resources are being used efficiently, while those inside indicate that the economy is utilizing resources inefficiently.

53) C

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Points along the curve indicate resources are being used efficiently, while those inside indicate that the economy is utilizing resources inefficiently.

54) C

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Points along the curve indicate resources are being used efficiently, while those inside indicate that the economy is utilizing resources inefficiently.

55) D

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. Points along the curve indicate resources are being used efficiently, while those inside indicate that the economy is utilizing resources inefficiently.

56) A

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. If technology improves or more resources become available, the curve will shift outward from the origin.

57) B

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. If technology improves or more resources become available, the curve will shift outward from the origin.

58) A

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. If technology improves or more resources become available, the curve will shift outward from the origin.

59) B

A production possibilities curve shows the possible combinations of goods and services an economy can efficiently produce, given its available resources and technology. If fewer resources are available, the curve will shift inward from the origin.

60) A

The three core economic choices are: what to produce, how to produce, and for whom to produce.

61) D

Those with the highest willingness to pay for a good or service are most likely to receive it because sellers will prefer to receive higher prices from consumers.

62) B

The market mechanism describes how prices act as a signal for consumers and producers that guide behavior in the same way Adam Smith described the invisible hand.

63) A

The market mechanism describes how prices act as a signal for consumers and producers that guide behavior in the same way Adam Smith described the invisible hand.

64) D

The market mechanism describes how prices act as a signal for consumers and producers that guide behavior in the same way Adam Smith described the invisible hand.

65) C

Adam Smith defined the invisible hand of the market as a force that directs economic activity. Today, we consider prices the guiding force of the market mechanism.

66) A

Laissez-faire is a French term that translates to “leave alone” (or literally, “let you do”) that is now applied as a doctrine of minimal government interference in markets.

67) D

When the government dictates how people can and should behave through rules or regulations, this constitutes government intervention.

68) B

Mixed economies are those that use a combination of the market mechanism and government intervention to direct economic activity.

69) B

Government intervention through laws and regulations may help resolve some failures of the market mechanism.

70) A

Market failures exist when the market mechanism generates an outcome that does not match socially desired outcomes.

71) B

Left alone, the market mechanism may generate an outcome where too many cigarettes are produced and consumed. For instance, children may smoke cigarettes without rules or regulations prohibiting them from doing so.

72) C

Market failures exist when the market mechanism generates an outcome that does not match socially desired outcomes.

73) A

Government failures exist when the government attempts to resolve market failures and either makes outcomes worse or fails to improve them.

74) D

Government policy that is delayed, forces inefficient production methods, or misaligns incentives of private citizens would all constitute a form of government failure.

75) C

Macroeconomics focuses on the big picture of an entire economy using outcomes such as unemployment, inflation, and economic growth.

76) D

Individual choices, such as how many hours on person chooses to work, are topics discussed in microeconomics.

77) D

Macroeconomics deals with economy-wide issues such as unemployment, inflation, and economic growth.

78) A

Individual choices and analyses of specific markets are topics discussed in microeconomics.

79) A

Individual choices and analyses of specific markets are topics discussed in microeconomics.

80) D

Economists use models as a way to explain and predict behavior, typically to develop better policy.

81) C

To better understand the economy, economists often isolate changes in only one thing at a time, rather than letting everything change at once. This assumption is known as the *ceteris paribus* assumption.

82) C

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

83) B

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

84) C

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

85) A

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

86) C

The slope of a production possibilities curve represents the opportunity costs of an economy. If the curve is linear (straight), then opportunity costs are constant, while a curve bowed away from the origin indicates opportunity costs increase as production of one good or service increases.

87) B

The slope of a production possibilities curve represents the opportunity costs of an economy. If the curve is linear (straight), then opportunity costs are constant, while a curve bowed away from the origin indicates opportunity costs increase as production of one good or service increases.

88) D

Changing points along a given production possibilities curve indicates an economy has altered its production mix of goods and services while remaining efficient. Changing points to a higher curve indicates the economy has increased productive capacity, while changing points to a lower curve indicates the opposite.

89) A

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

90) D

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

91) C

Changing points along a given production possibilities curve indicates an economy has altered its production mix of goods and services while remaining efficient. Changing points to a higher curve indicates the economy has increased productive capacity, while changing points to a lower curve indicates the opposite.

92) C

Changing points along a given production possibilities curve indicates an economy has altered its production mix of goods and services while remaining efficient. Changing points to a higher curve indicates the economy has increased productive capacity, while changing points to a lower curve indicates the opposite.

93) C

Changing points along a given production possibilities curve indicates an economy has altered its production mix of goods and services while remaining efficient. Changing to a higher curve indicates the economy has increased productive capacity, while changing to a lower curve indicates the opposite.

94) B

Changing points along a given production possibilities curve indicates an economy has altered its production mix of goods and services while remaining efficient. Changing points to a higher curve indicates the economy has increased productive capacity, while changing points to a lower curve indicates the opposite.

95) D

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

96) D

Changing points along a given production possibilities curve indicates an economy has altered its production while remaining efficient. Changing points to a higher curve indicates the economy has increased productive capacity, while changing points to a lower curve indicates the opposite.

97) B

Changing points along a given production possibilities curve indicates an economy has altered its production while remaining efficient. Changing to a higher curve indicates the economy has increased productive capacity, while changing to a lower curve indicates the opposite.

98) C

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

99) C

Efficiency occurs along the production possibilities curve. The slope of the line reflects opportunity costs.

100) B

Changing points along a given production possibilities curve indicates an economy has altered its production while remaining efficient. Changing to a higher curve indicates the economy has increased productive capacity, while changing to a lower curve indicates the opposite.

101) C

The slope of a production possibilities curve represents opportunity costs. When the curve is steeper, increasing production of the good on the x-axis would require higher sacrifices of the good on the y-axis.

102) D

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

103) A

The slope of a production possibilities curve represents opportunity costs. When the curve is steeper, increasing production of the good on the x-axis would require higher sacrifices of the good on the y-axis. However, if an economy can produce more of something without any sacrifice of an alternative good, the production possibilities curve will be either horizontal or vertical.

104) A

The slope of a production possibilities curve represents opportunity costs. When the curve is steeper, increasing production of the good on the x-axis would require higher sacrifices of the good on the y-axis.

105) D

The slope of a production possibilities curve represents opportunity costs. When the curve is steeper, increasing production of the good on the x-axis would require higher sacrifices of the good on the y-axis.

106) D

Production points inside the production possibilities curve are possible for an economy to achieve but represent inefficient outcomes. Points along the curve indicate possibilities that utilize all resources efficiently while points outside the curve are not possible with current resources and technology.

107) D

The opportunity cost is what the economy must give up as it alters its production in this way.

108) C

Changing production from D to G would mean the economy gains KL units of clothing at the expense of AB units of food per year.

109) B

Changing production from D to G would mean the economy gains KL units of clothing at the expense of AB units of food per year.

110) A

Changing production from J to D would mean the economy gains AC units of food at the expense of MK units of food per year.

111) B

The economy would not be utilizing all resources at points E, F, and H but could increase production of food, clothing, or both with available resources and arrive at outcome D, G, or J. Production levels associated with point N would be unattainable given current resources and technology.

112) B

The economy would not be utilizing all resources at points E, F, and H but could increase production of food, clothing, or both with available resources and arrive at outcome D, G, or J. Production levels associated with point N would be unattainable given current resources and technology.

113) C

The economy would not be utilizing all resources at points E, F, and H but could increase production of food, clothing, or both with available resources and arrive at outcome D, G, or J. Production levels associated with point N would be unattainable given current resources and technology.

114) A

The economy would not be utilizing all resources at points E, F, and H but could increase production of food, clothing, or both with available resources and arrive at outcome D, G, or J. Production levels associated with point N would be unattainable given current resources and technology.

115) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

As production of both B-1 Bombers and Stealth Bombers increases, increasing amounts of the alternative must be sacrificed.

116) B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

Moving from T to S means the economy would gain one Stealth Bomber at the expense of one B-1 Bomber.

117) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

Moving from U to V means the economy would gain one B-1 Bomber at the expense of three Stealth Bombers.

118) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

Moving from U to T means the economy would gain two Stealth Bombers at the expense of ½ of a B-1 Bomber.

119) A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

The most B-1 Bombers sacrificed for another one more Stealth Bomber would be one and is shown as a movement from T to S.

120) B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

The most Stealth Bombers sacrificed for another one more B-1 Bomber would be three and is shown as a movement from U to V.

121) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

The fewest Stealth Bombers sacrificed for another one more B-1 Bomber would be one and is shown as a movement from S to T.

122) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **S** | 0 | NA | 10 | (1 − 0) / (10 − 9) = 1 |
| **T** | 1 | (10 − 9) / (1 − 0) = 1 | 9 | (2 − 1) / (9 − 7) = 1 / 2 |
| **U** | 2 | (9 − 7) / (2 − 1) = 2 | 7 | (3 − 2) / (7 − 4) = 1 / 3 |
| **V** | 3 | (7 − 4) / (3 − 2) = 3 | 4 | NA |

The fewest B-1 Bombers sacrificed for one more Stealth Bomber would be 1/3 and is shown as a movement from V to U.

123) A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

As production of both B-1 Bombers and Stealth Bombers increases, increasing amounts of the alternative must be sacrificed.

124) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

Moving from point C to B would mean the economy gains 30 Stealth Bombers at the expense of 10 B-1 Bombers.

125) B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

Moving from point C to B would mean the economy gains 30 Stealth Bombers at the expense of 10 B-1 Bombers.

126) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

Moving from point A to B would mean the economy gains 15 B-1 Bombers at the expense of 15 Stealth Bombers.

127) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

Moving from point A to B would mean the economy gains 15 B-1 Bombers at the expense of 15 Stealth Bombers. This means the economy sacrifices 1 Stealth Bomber for each additional B-1 Bomber produced.

128) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

Moving from point B to A would mean the economy gains 15 Stealth Bombers at the expense of 15 B-1 Bombers. This means the economy sacrifices 1 B-1 Bomber for each additional Stealth Bomber produced.

129) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost (Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

The highest opportunity cost for a B-1 Bomber is 10 Stealth Bombers and is shown as a movement from production point C to D.

130) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of B-1** | **Opportunity Cost (Foregone Stealth)** | **Number of Stealth** | **Opportunity Cost(Foregone B-1)** |
| **A** | 20 | NA | 195 | (35 − 20) / (195 − 180) = 1 |
| **B** | 35 | (195 − 180) / (35 − 20) = 1 | 180 | (45 − 35) / (180 − 150) = 1 / 3 |
| **C** | 45 | (180 − 150) / (45 − 35) = 3 | 150 | (50 − 45) / (150 − 100) = 1 / 10 |
| **D** | 50 | (150 − 100) / (50 − 45) = 10 | 100 | NA |

The lowest opportunity cost for a Stealth Bomber is 1/10 B-1 Bombers and is shown as a movement from production point D to C.

131) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

Moving from point N to M would mean the economy gains one comb at the expense of two brushes.

132) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes**  **in Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

Moving from point N to M would mean the economy gains one comb at the expense of two brushes.

133) D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

Moving from point K to L would mean the economy gains seven brushes at the expense of one comb.

134) A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

As production of one good increases, more of the alternative good must be sacrificed.

135) B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

Moving from point L to K would mean the economy gains one comb at the expense of seven brushes.

136) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

Moving from point N to M would mean the economy gains one comb at the expense of two brushes.

137) A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushe in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

Moving from point M to L would mean the economy gains 1 comb at the expense of 4 brushes.

138) C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 – 0) / (23 – 21) = 1/2 | 0 | NA |

The highest opportunity cost for brushes is ½ combs per brush and is represented as a movement from production point M to N.

139) B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Combination** | **Number of Brushes** | **Opportunity Cost of Brushes in**  **Terms of Combs** | **Number of Combs** | **Opportunity Cost of Combs in**  **Terms of Brushes** |
| **J** | 0 | NA | 4 | (10 − 0) / (4 − 3) = 10 |
| **K** | 10 | (4 − 3) / (10 − 0) = 1/10 | 3 | (17 − 10) / (3 − 2) = 7 |
| **L** | 17 | (3 − 2) / (17 − 10) = 1/7 | 2 | (21 − 17) / (2 − 1) = 4 |
| **M** | 21 | (2 − 1) / (21 − 17) = 1/4 | 1 | (23 − 21) / (1 − 0) = 2 |
| **N** | 23 | (1 − 0) / (23 − 21) = 1/2 | 0 | NA |

The highest opportunity cost for combs is 2 brushes per comb and is represented as a movement from production point M to N. The economy gains two brushes by giving up one comb.

140) B

141) A

Increasing production of military goods in North Korea will reduce resources available for food production.

142) D

Approximately 80 percent of energy in the United States presently comes from coal, petroleum, and natural gas.

143) C

The curve implies that studying may benefit your GPA, but at some point, increased study does not yield as many grade-related benefits.

144) B

If grading standards are lowered, higher GPA’s can be attained with fewer hours of study.

145) A

Each 25-unit change in x generates a larger increase in y as x rises.

146) A

Recall that slope is calculated as (vertical change) / (horizontal change). Here, slope = (80 − 50) / (100 − 75) = 1.20.

147) B

Recall that slope is calculated as (vertical change) / (horizontal change). Here, slope = (50 − 30) / (75 − 50) = 0.80.

148) C

The curve is steeper at point M than at point L, so the slope is higher at M than L.

149) A

Recall that slope is calculated as (vertical change) / (horizontal change).

150) A

Recall that slope is calculated as (vertical change) / (horizontal change). If the vertical change is negative while the horizontal change is positive, then the slope will be negative.

151) B

Recall that slope is calculated as (vertical change) / (horizontal change). If the vertical change is always the same for identical horizontal changes, then the slope will be the same throughout the line.

152) C

If the relationship between two variables changes, the entire curve representing that position will shift to reflect this new reality.

153) A

154) A

155) All resources are scarce. Any time a scarce resource is used in one way, the opportunity to use the resource in other ways is given up. The resources used to produce a “free lunch” could have been used to produce other goods or services, so an opportunity cost is incurred.

156) By attending class on a given day, you are giving up the opportunity to do something else with your time. This could be work, sleep, studying, hanging out with friends, or a combination of activities. Because opportunity costs represent what we give up when we make a choice, any of these activities could be an opportunity cost of you attending class (which hopefully is more beneficial than what you’re giving up!).

157) The slope of any line indicates how a change in one variable is linked to a change in another. Since the production possibilities curve indicates all the possible combinations of goods and services an economy could produce with current resources and technology, the slope tells us the trade-off an economy would experience as it converts production. This is how we define opportunity costs—what we give up to get something else.

158) The typical production possibilities curve bends or bows outward. It has this shape because opportunity costs increase as society produces more of a good. In order to get more of a particular good, increasing quantities of other goods must be given up. This is known as the law of increasing opportunity costs.

159) As society produces more of a good, ever-increasing quantities of other goods and services must be sacrificed or given up. This occurs mostly because there is difficulty experienced in moving resources from one industry to another. The mix of factor inputs also has an impact and may restrict output capabilities.

160) A production possibilities curve shows potential output using all available resources efficiently and current technology. If an economy does not use all the available resources efficiently with current technology available to it, then it will produce inside the production possibilities curve. This is referred to as inefficiency.

161) Macroeconomics focuses on aggregate economic behavior. Full employment, price stability, and economic growth are macroeconomic issues. Microeconomics is concerned with the smaller components that actually contribute to the macroeconomy, such as individuals, particular business firms and industries, and government agencies.

162) The market mechanism answers the *what* question through the indirect interactions of producers and consumers. Market prices and sales signal the desired output. Producers desire to maximize profits and look for the least-cost method of production. This answers the *how* question. The market distributes output to the highest bidder and in doing so answers the *for whom* question.