

Chapter 01 - Limits, Alternatives, and Choices

**Short Answer Questions**

275. What is a brief definition of economics? What are the conditions that give rise to this definition?

It is the social science concerned with the efficient use of scarce resources to achieve the maximum satisfaction of economic wants. Economic wants are many and diverse. People seek many goods and services to satisfy their wants. Society uses productive resources to produce goods and services that meet these wants. Unfortunately, the economic wants of society exceeds the productive capacity of the economy to produce the goods and services to satisfy those wants.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-01 List the ten key concepts to retain for a lifetime.*

*Topic: 01-01 Ten Key Concepts to Retain for a Lifetime*

276. What are the key economic concepts that pertain to the individual?

The four key economic concepts that pertain to the individual are: (1) when individuals face scarce resources relative to their wants, they must incur tradeoffs; (2) the cost of a choice is what someone gives up for it or the opportunity cost; (3) decisions are usually made at the margin where a little more or a little less of something is chosen; and (4) choices are influenced by incentives.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-01 List the ten key concepts to retain for a lifetime.*

*Topic: 01-01 Ten Key Concepts to Retain for a Lifetime*

277. What are the key economic concepts that pertain to interactions among individuals?

The three key economic concepts that pertain to interactions among individuals are: (1) individuals can make themselves better off through specialization and trade; (2) markets usually do a good job of coordinating decisions among individuals, groups, and nations; and (3) government can sometimes improve the coordinating function of markets.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-01 List the ten key concepts to retain for a lifetime.*

*Topic: 01-03 Scarcity and Choice*

278. What are the key economic concepts that pertain to the economy as a whole?

The three key economic concepts are: (1) the standard of living in a country depends on its production of goods and services; (2) printing of money in excess of the growth of output of goods and services will eventually lead to inflation; (3) society faces a short-run tradeoff between inflation and unemployment.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-01 List the ten key concepts to retain for a lifetime.*

*Topic: 01-04 Purposeful Behaviour*

279. What do economists mean when they say that "there is no free lunch"? Give another example to which this statement applies.

Anything of any value that is offered for "free" still has a cost. Economists refer to this sacrifice as an opportunity cost. In this case, the resources that were used to provide the free lunch could have been put to an alternative use. The opportunity cost is the next best alternative use for those resources. As another example, consider the case of a bank that offers you a "free" sports bag to open an account at the bank. The bag may be free to you as a new bank customer, but there is still a cost paid by the bank in the form of resources that could have been put to alternative uses.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-02 Define economics and the features of the economic way of thinking.*

*Topic: 01-06 Theories, Principles, and Models*

280. What are the three interrelated features of the economic perspective?

First, economics recognizes that there is a general condition of scarcity that forces individuals and society to make choices. Human and property resources are scarce, so choices must be made about how best to use those limited resources. Second, economics assumes that private or public decision-making is based on "rational self-interest". People make rational decisions to achieve the maximum satisfaction of a goal. Consumers try to get the best value for their expenditures. Workers try to get the best job given their skills and abilities. Businesses try to maximize their profits. Elected representatives try to enact policies that best promote the national interest. Third, economics focuses on marginal analysis when making an economic decision. The marginal or "additional" costs from an economic choice are weighed against the additional benefit. If the marginal benefit outweighs the marginal costs, then a decision will be made to take the beneficial action. If the marginal cost is greater than the marginal benefit, then the action will not be taken.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-02 Define economics and the features of the economic way of thinking.*

*Topic: 01-08 Microeconomics*

281. What is utility and what is its relevance to rational behaviour?

Utility is the satisfaction that individuals derive from consuming goods and services. The economic approach assumes that humans engage in rational behaviour, that individuals make decisions to maximize their utility.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-02 Define economics and the features of the economic way of thinking.*

*Topic: 01-08 Microeconomics*

282. Use marginal analysis to explain why it is possible to "have too much of a good thing". Use education as an example.

This explanation is based on an evaluation of the marginal costs and marginal benefit of providing a good or service. We may want more education for our society, but at some point the marginal cost of providing additional education is greater than the marginal benefit of the additional education. We would have to give up too many other things to obtain the additional education. For example, would it make sense to provide additional education resources for everyone so that they can earn a Ph.D. degree? The answer is no. In this case, the marginal cost of these additional educational resources (for example, lost labour time or inefficient use of people's abilities) would not be worth the marginal benefit to society of having everyone earn a Ph.D. degree.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-02 Define economics and the features of the economic way of thinking.*

*Topic: 01-08 Microeconomics*

283. What does it mean to say that theories, principles, and models are "purposeful simplifications"?

Theories, principles, and models are "purposeful simplifications" means that when we study economies we find far too much complexity to make any significant gain in understanding. By assuming away unnecessary details we make it possible to gain a clearer understanding of basic economic relationships.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-03 Describe the role of economic theory in economics.*

*Topic: 01-09 Macroeconomics*

284. The distinguished economist Kenneth Boulding stated: "Theories without facts may be barren, but facts without theories are meaningless". Explain what he meant.

Economic theories are generalizations about the economic behaviour of individuals and institutions. As generalizations or principles, they are abstractions and may not offer specific information about a particular issue that can be obtained from facts. Economic theories are barren in the sense that they offer a framework for thinking about the economic issue without a lot of the details about it. Having a lot of facts about an economic issue, however, is not very meaningful. Facts need to be arranged and organized if they are to have meaning and give insight into the issue. Economic theory offers that framework for organizing the factual information.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-03 Describe the role of economic theory in economics.*

*Topic: 01-09 Macroeconomics*

285. Explain the importance of the ceteris paribus or "other-things-equal" assumption.

The real-world is "messy" so economists try to analyze changes in the variables of interest by finding ways to hold "other things constant or equal". The ceteris paribus assumption is made to indicate that these other variables are not changing or affecting the variables of interest. For example, the theory of consumer demand states that price and quantity demanded are inversely related; people will buy less at higher prices than they will at lower prices. But this theory assumes that other variables like tastes and income that might affect quantity demanded are not changing. Increasingly, experimental economists are attempting to test theories in laboratory environments in which ceteris paribus assumptions hold.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-03 Describe the role of economic theory in economics.*

*Topic: 01-09 Macroeconomics*

286. "Bad theories are abstract and therefore unrealistic; good theories are fully realistic and fit all the facts". Evaluate.

While some abstract theories are bad, that certainly does not have to be true. Most good theories are generalizations or predictions about human economic behaviour and will not be true in every situation, and thus will not fit all the facts all of the time. A good theory is based on observable behaviour and will generally explain or predict correctly.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-03 Describe the role of economic theory in economics.*

*Topic: 01-09 Macroeconomics*

287. "Economic models are somewhat like different types of maps". Evaluate.

Economic models are necessarily a simplification of the real world. The validity of a particular economic model should be based upon a comparison of the model's predictions to observable fact. A world atlas is not the best map to use to find out how to get to Vancouver from Charlottetown, but it will tell you where South Africa is in relation to Luxembourg. If you wanted to get to Vancouver from Charlottetown, you'd need a road map of Canada. But a road map would not sufficiently describe the elevations if you were riding your bike and would not likely tell you how to find Main Street in Golden, B.C. The map you use should be judged based not on its complete accuracy and detail, but on its ability to get you where you are going.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-03 Describe the role of economic theory in economics.*

*Topic: 01-09 Macroeconomics*

288. Distinguish between microeconomics and macroeconomics.

Microeconomics deals with individual economic units such as industries, firms, households, and with individual markets, particular prices, and specific goods and services.

Macroeconomics, on the other hand, deals with the economy as a whole, including such major aggregates as the household, business, and governmental sectors and with totals for the economy.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-10 Positive and Normative Economics*

289. Below are six statements. Indicate whether each one pertains to microeconomics (MIC) or macroeconomics (MAC).

- (a) "The inflation rate in Canada hit its lowest level in the last twenty years".
- (b) "The profits of BCE rose 20 percent during the past quarter".
- (c) "A drought has occurred in the Prairies. The prices for barley are expected to rise sharply".
- (d) "The nation's economy grew at an annual rate of 3.7 percent in the final quarter of the year".
- (e) "The trade surplus in Canada was \$4 billion last month".
- (f) "General Motors plans to spend \$800 million on a new automobile plant".

(a), (d), and (e) are macro; (b), (c), and (f) are micro.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-10 Positive and Normative Economics*



290. Why have the last few years been an exciting time to study macroeconomics?

Since macroeconomics deals with the economy as a whole, the global financial crisis that spread to Canada in late 2008 resulted in a deep recession, which has been dubbed the Great Recession which has impacted major aggregates including households, businesses, and governmental sectors for the Canadian economy.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-10 Positive and Normative Economics*

291. Give one example of a positive economic statement and one example of a normative economic statement.

A positive economic statement is any factual statement such as: "Last month there were 1.2 million workers unemployed". A normative economic statement is one which contains an opinion such as: "Many people today are too lazy to look for work and that is why the unemployment figures are so high".

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-13 Unlimited Wants*

292. Below are six statements. Identify whether each is a positive or normative statement.

- (a) The minimum wage should be increased so low-income workers can earn a living wage.
- (b) The unemployment rate is too high and should be reduced through government actions.
- (c) The rate of inflation was about 2 percent last year, an all time low for the past decade.
- (d) The government should take action to break up the monopoly power of Air Canada.
- (e) Interest rates should be lower in Canada so that people can afford to build a home.
- (f) The Federal government achieved a budget surplus for the first time in thirty years.

(a), (b), (d) and (e) are normative; and (c) and (f) are positive.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-13 Unlimited Wants*

293. Identify whether each of the following is a positive or normative statement.

- (a) Should tuition fees increase, fewer students would obtain a post-secondary education.
- (b) The Prime Minister announced that Canada is the best place in the world to live.

Both statements are positive. Although statement (a) contains the word, "should", it is simply a cause and effect statement. Another way of expressing the same idea is "If tuition fees are increased, fewer students would obtain a post-secondary education". Statement (b) is also positive because it is concerned with facts. Although the statement is made up of a normative phrase ("best place in the world"), at its core is a factual statement regarding an announcement by the Prime Minister.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-13 Unlimited Wants*

294. "Economists are scientists and therefore should not become involved in making value judgments which policy formulation necessarily entails". Do you agree?

It is important to distinguish between positive and normative economics. When conducting positive economic analysis, economists use objective, scientific methods to collect data and test hypotheses to arrive at economic theories and principles. However, there is a need to apply economic theories to real-world problems and this necessarily requires some value judgments or the use of normative economics. Even scientists who can experiment in laboratories have to make value judgments when they arrive at the point of applying their theories. For example, geneticists must make value judgments about the uses of genetic science.

Economists know their own theories best so they should be involved in the decisions about how to apply those theories. Of course, in a democratic society those judgments are often advisory and must be approved by elected representatives before they are enacted.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-13 Unlimited Wants*

295. "Economics cannot be scientific because it is based upon the value judgment that 'more (output) is better'". Do you agree?

This statement can be subjected to positive economic analysis. If you can show that this assumption is valid, i.e., that it is correct that most people believe that "more is better", then this is not a value judgment but a testable principle of economics. Where this assumption is questioned, it is a rather simple matter to test the hypothesis about whether "more is regarded as better". In other words, if people behave as if more is better, then this assumption is not a result of value judgments by economists, but rather the result of observing that this is the way humans act.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-04 Distinguish microeconomics from macroeconomics; and positive economics from normative economics.*

*Topic: 01-13 Unlimited Wants*

296. What were the approximate average incomes of Canadians and Pakistanis in 2015?

\$47250 and \$1440 (\$US at market exchange rates).

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-05 Explain the individual's economic problem and how trade-offs; opportunity costs; and attainable combinations can be illustrated with budget lines.*

*Topic: 01-15 Attainable and Unattainable Combinations*

297. What were the approximate average incomes of Canadians and Pakistanis in 2015?

\$47250 and \$1440 (\$US at market exchange rates).

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-05 Explain the individual's economic problem and how trade-offs; opportunity costs; and attainable combinations can be illustrated with budget lines.*

*Topic: 01-14 The Budget Line*

298. What is meant by the "the individual's economic problem"?

An individual's income is limited whereas their wants are unlimited. This forces them to make choices to optimize their well-being.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-05 Explain the individual's economic problem and how trade-offs; opportunity costs; and attainable combinations can be illustrated with budget lines.*

*Topic: 01-16 Trade-offs and Opportunity Costs*

299. Describe the Greek Debt Crisis, and explain its relation to the Economic Problem?

In late 2009, it became known that the Greek government had gone on a spending spree, and had an accumulated debt that was about 120 percent of the country's income (or GDP). Moreover, in 2010 Greece's annual budget shortfall was more than 10 percent of GDP, one of the highest in the world and unsustainable given its poor prospects for economic growth, and so the Greek economy was in a crisis. The Greek government was forced to institute strict austerity measures that led to the contraction of the economy in both 2010 and 2011. Greece was able to consume beyond its means by borrowing, but inevitably in a world of scarcity of resources this practice cannot be sustained indefinitely. Just like an individual's income is limited whereas their wants are unlimited, similarly on an aggregate level the entire nation of Greece is forced them to make choices to optimize their well-being.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-05 Explain the individual's economic problem and how trade-offs; opportunity costs; and attainable combinations can be illustrated with budget lines.*

*Topic: 01-17 Choice*

300. What variables are used to determine the individual's budget line?

Income and the prices of the two goods will determine the position of the budget line. Income divided by the price of a good will determine the point where the budget line intersects an axis.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-05 Explain the individual's economic problem and how trade-offs; opportunity costs; and attainable combinations can be illustrated with budget lines.*

*Topic: 01-17 Choice*

301. How do income changes affect the position of the budget line?

Increases in income causes a parallel shift outward of the budget line (without changing its slope) while decreases in income cause the budget line to shift inward.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-20 Scarce Resources*

302. What do economists mean when they say that economic resources or factors of production are scarce or limited in supply?

They mean that resources are not so abundant that they may be used freely for everything everyone wants. There are not enough resources available to meet all of society's unlimited economic wants.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-18 Income Changes*

303. What is meant by "society's economic problem"?

The economic problem stems from two related facts. Economic wants are unlimited because they cannot be completely satisfied with the existing limited supply of resources available for production. Resources are said to be scarce relative to these unlimited economic wants. For this reason, people must make choices and economize on resource use.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-20 Scarce Resources*

304. List the four resource categories and give a brief description of each.

- (a) Land: natural resources including land, forests, water and minerals.
- (b) Capital: investment goods or those manufactured items used in production of other goods. Factories, tools, machinery, transportation facilities, and equipment are examples. Money is not a capital good.
- (c) Labour: a broad term used to describe the physical and mental talents of men and women available to be used in producing goods and services.
- (d) Entrepreneurial ability: a type of human resource, but unique from productive labour in that it refers to the person who is the driving force behind production decisions, innovation, and the one who is willing to take the risk of time, effort, reputation, and/or funds.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-20 Scarce Resources*

305. What four basic functions does the entrepreneur perform for the economy?

First, the entrepreneur takes the initiative in combining resources to produce a product. In this way the entrepreneur is a catalyst for production in the economy. Second, the entrepreneur makes basic business policy decisions that set the course for the business enterprise. Third, the entrepreneur will introduce new or improved products to the market place or develop new forms of business organization. In this role, the entrepreneur serves as an innovator for the economy. Fourth, the entrepreneur bears the risk in terms of time, effort, and invested funds. Innovation is risky, as nearly all new products and ideas are subject

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-19 Society's Economic Problem*

306. Explain and evaluate: "If resources were infinitely abundant in relation to the demand for them, the economic problem would dissolve in a sea of affluence".

The economic problem refers to the need to make choices because economic wants are virtually unlimited but the means (income, time, resources) for satisfying those wants are limited. If resources were infinitely abundant in relation to the demand for them, people would not have to make choices and there would be no need for economic systems to distribute the goods and services produced. In a world of abundance, people could simply help themselves to whatever they wanted.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-19 Society's Economic Problem*

307. "The relative scarcity of resources makes the operation of any economy a matter of choosing between alternatives". Explain.

The fact that people cannot have as much as they want of everything requires them to make choices. There has to be some system for making these choices. For example, it may be "first come, first serve", or a system based on power with the strongest controlling the resources, or it may be a market-based system where the primary motivation is the profit incentive.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-18 Income Changes*

308. "The two cornerstones of economics are the scarcity of resources and the multiplicity of wants. True economy consists of deriving maximum want satisfaction from available resources". Explain.

The first statement refers to the basic economic problem: that society's wants are unlimited relative to the limited supply of productive resources. The second part of the statement refers to the concept of efficiency, both allocative and productive. Since resources are scarce, it is desirable to achieve the most output from those available. Otherwise we waste resources and will not satisfy as many wants as we could from the resources that we have available, which would mean not achieving productive efficiency. Allocative efficiency means the maximum satisfaction of wants with these resources.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-06 List the categories of scarce resources and delineate the economic problem.*

*Topic: 01-18 Income Changes*

309. Explain the relationship between full employment of resources and full production.

Full employment of resources means that none of the available resources are idle. Full production goes one step further. It means that not only are resources fully employed, they are employed efficiently in the sense that they are making their most valued contributions to the national output. If the economy fails to realize full production, then economists say our resources are underemployed.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Topic: 01-21 Resource Categories*

310. The production possibilities table below shows the hypothetical relationship between the production of food and clothing in an economy.

Combination	Food	Clothing
A	0	4
B	7	3
C	13	2
D	18	1
E	22	0



- (a) What is the marginal opportunity cost of producing the second unit of clothing?
- (b) What is the total opportunity cost of producing two units of clothing?
- (c) What is the marginal opportunity cost of producing the third unit of clothing?
- (d) What is the total opportunity cost of producing three units of clothing?

(a) 5 units of food ( $18 - 13 = 5$ ); (b) 9 units of food ( $22 - 13 = 9$ ); (c) 6 units of food ( $13 - 7 = 6$ ); (d) 15 units of food ( $22 - 7 = 15$ ).

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

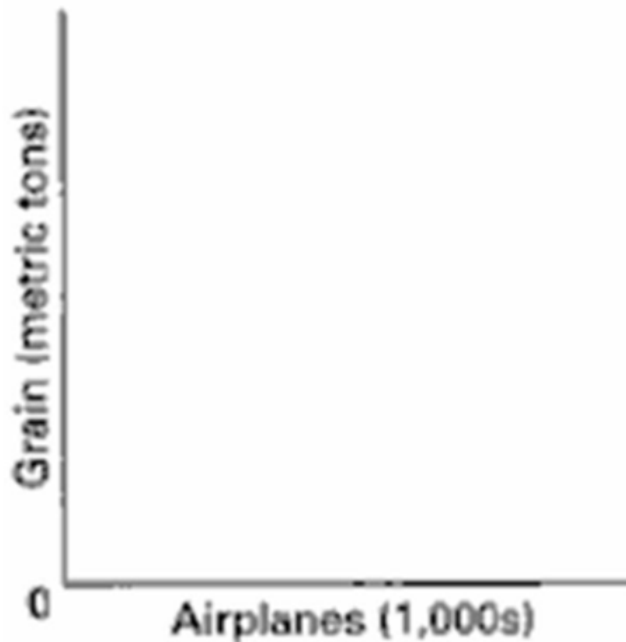
*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-22 Land*

311. A production possibilities table for two products, grain and airplanes, is found below. Usual assumptions regarding production possibilities are implied. Grain is measured in tons and airplanes are measured in units of 1,000.

Combination	Grain (tons)	Airplanes (1,000s)
A	0	7
B	14	6
C	26	5
D	36	4
E	44	3
F	50	2
G	54	1
H	56	0

(a) Using the below graph construct a production possibilities curve from this information placing grain on the vertical axis and airplanes on the horizontal axis.



(b) What is the opportunity cost of producing the first unit of airplanes? The marginal opportunity cost of producing the fourth unit of airplanes?

(b) Two units of grain (56-54) are sacrificed if one unit of planes is produced. When the fourth unit of planes is produced the marginal opportunity cost is eight units of grain (44-36).

*Difficulty: Medium*

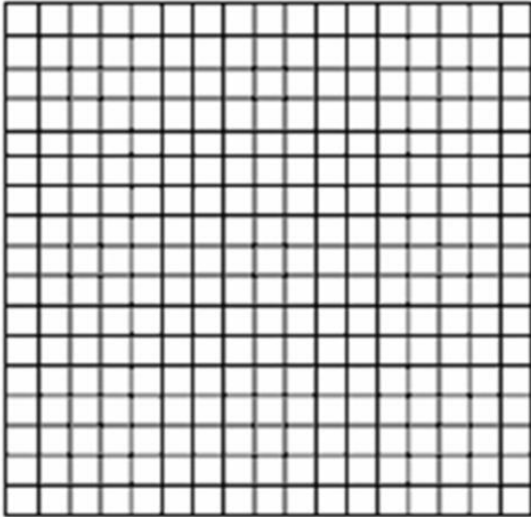
*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-22 Land*

312. A production possibilities table for two products, corn and paper, is found below. Usual assumptions regarding production possibilities are implied. Corn is measured in tons, and paper is measured per unit.

Combination	Corn	Paper
A	0	6
B	18	5
C	33	4
D	45	3
E	54	2
F	60	1
G	63	0

(a) Using the following graph construct a production possibilities curve from this information placing corn on the vertical axis and paper on the horizontal axis.



(b) What is the marginal opportunity cost of producing the first unit of paper? The marginal opportunity cost of producing the fourth unit of paper?

(b) Three units of corn (63-60) are sacrificed if 1 unit of paper is produced. When the fourth unit of paper is produced the opportunity cost is 12 units of corn (45-33).

*Difficulty: Medium*

*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-22 Land*

313. What is the economic rationale for the law of increasing costs?

Economic resources are not completely adaptable to alternative uses. In a two-product (A and B) economy, an increase in the production of product A will cause a reduction in the quantity of product B that can be produced because resources are being reallocated from the production of B to A. That reallocation of resources is not constant and becomes increasingly costly in terms of the lost production of B. As more resources shift from the production of B to A, these resources are less and less adaptable or suitable for the production of A. The production of more and more of A entails an increasing opportunity cost in the form of less and less production of B.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-24 Capital*

314. Explain how increasing opportunity costs are reflected graphically in the production possibilities curve. How would the curve appear if opportunity costs were constant?

The production possibilities curve illustrates the concept of increasing opportunity cost with its changing slope. This causes the curve to be concave toward the origin. It occurs because when society produces more and more of one product, it must give up increasing amounts of alternative products due to the fact that resources are specialized. If resources could be used equally efficiently to produce all things, opportunity costs would be constant and the production possibilities curve would be a straight line graph showing alternative production possibilities.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-24 Capital*

315. An economy consists of five workers, who can produce either fish or fruit. The following table shows the daily output of each worker.

Worker	Fish	Fruit
A	10	20
B	6	10
C	8	6



D	8	4
E	10	10

- (a) Suppose one worker catches fish and four workers pick fruit. For the economy to achieve productive efficiency, which of the five workers must fish?
- (b) Does the economy achieve full employment and productive efficiency by producing 26 fish and 20 fruit?

(a) Productive efficiency requires that resources be used in the least costly way. To achieve productive efficiency, worker D must catch fish since this worker incurs the lowest opportunity cost. For each fish that worker D catches,.5 units of fruit are lost. The other workers face a higher opportunity cost for each fish caught. As the economy produces more fish, it must shift the workers from fruit. Initially, the opportunity cost of doing so is relatively low. However, the opportunity cost increases. This is why the production possibilities curve is concave to the origin. Although workers A and E can produce more fish than worker D, they also incur greater opportunity costs.

(b) Although the economy may be achieving full employment, it does not achieve productive efficiency. The economy can produce 26 fish and 20 fruit when fully employing workers A, C, and D in fishing and workers B and E in picking fruit. However, this allocation of resources does not achieve full production. Resources are underemployed. It is possible to produce more fish without losing any fruit by reallocating the five workers. If workers B, C, D, and E catch fish and worker A picks fruit, the economy's output is 32 fish and 20 fruit. Worker A incurs the lowest opportunity cost of all workers when picking fruit. Therefore, productive efficiency requires that worker A is allocated to picking fruit before any other worker.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-21 Resource Categories*



316. An economy consists of five workers, who can produce either fish or fruit. The following table shows the daily output of each worker.

Worker	Fish	Fruit
A	4	4
B	6	2
C	2	1
D	8	6
E	4	1

(a) Suppose one worker catches fish and four workers pick fruit. For the economy to achieve productive efficiency, which of the five workers must fish?

(b) Does the economy achieve full employment and productive efficiency by producing 12 fish and 4 fruit?

(a) Productive efficiency requires that resources be used in the least costly way. To achieve productive efficiency, worker E must catch fish since this worker incurs the lowest opportunity cost. For each fish that worker E catches, .25 units of fruit are lost. The other workers face a higher opportunity cost for each fish caught. As the economy produces more fish, it must shift the workers from fruit. Initially, the opportunity cost of doing so is relatively low. However, the opportunity cost increases. This is why the production possibilities curve is concave to the origin. Although workers B and D can produce more fish than worker E can, they also incur greater opportunity costs.

(b) Although the economy may be achieving full employment, it does not achieve productive efficiency. The economy can produce 12 fish and 4 fruit when fully employing workers A and D in fishing and workers B, C, and E in picking fruit. However, this allocation of resources does not achieve full production. Resources are underemployed. It is possible to produce more fish without losing any fruit by reallocating the five workers. If workers B, C, D, and E catch fish and workers A picks fruit, the economy's output is 20 fish and 4 fruit. Worker A incurs the lowest opportunity cost of all workers when picking fruit. Therefore, productive efficiency requires that worker A is allocated to picking fruit before any other worker.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-07 Apply the concepts of production possibilities analysis; increasing opportunity costs; and economic growth.*

*Topic: 01-21 Resource Categories*

317. What changes must occur for the potential total output of the economy to grow?

Economic growth is the result of (1) increases in supplies of factors of production or resources, (2) improvements in factor or resource quality, and (3) technological advances so that more can be produced with the existing level and quality of resources.

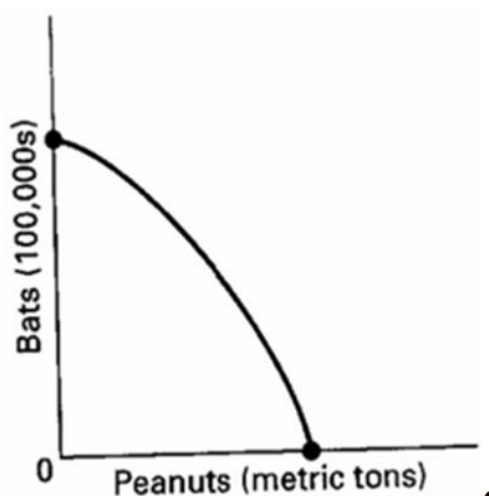
*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-27 Production Possibilities Table*

318. Look at the following production possibilities curve illustrating the possibilities in Sluggerville for producing bats and/or peanuts with the existing level of resources and technology.



- (a) Show a point U that would indicate unemployed resources in Sluggerville.
- (b) Draw a new curve B that illustrates the results of improved technology in the production of bats, but no change in the production efficiency of peanuts.
- (c) Show a point G that would indicate a point that is currently unattainable in the production of peanuts and bats in Sluggerville.

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-27 Production Possibilities Table*

319. Explain how each event affects production possibilities.

- (a) The population becomes more educated over time as the number of high school dropouts falls and the number of college graduates rises.
  - (b) The unemployment rate declines from 8 to 6 percent of the labour force.
  - (c) Businesses and government are unable to solve a major computer problem, thus reducing economic efficiency and national output.
  - (d) Advances in telecommunications and new technology significantly contribute to economic growth over time.
  - (e) The Federal government decides to allocate more resources to national defence.
- 
- (a) Improvements in the basic education of the labour force typically contribute to an increase in productivity. The production possibilities curve should move outward.
  - (b) Unemployment means that there is inefficient use of existing resources. Production moves from a point inside the production possibilities curve toward the frontier.
  - (c) The most likely answer is that the production possibilities curve shifts inward. It would also be possible that there is movement from the frontier of the production possibilities curve to an interior point. Both answers indicate that there is less economic inefficiency in the economy.
  - (d) Advances in telecommunications and new technology significantly contribute to economic growth over time.
  - (e) There will be movement along the existing production possibilities curve toward more defence goods at one axis from all other goods at the other axis.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-27 Production Possibilities Table*

320. Describe the adjustments in the production possibilities curves in each of the following situations for the Canadian economy.

- (a) the economy moves from full employment into a deep recession
- (b) the economy makes great strides in eliminating discrimination
- (c) the end of the Cold War leads to cuts in military spending
- (d) the government significantly increases spending for health and education

(a) The economy begins at a point on the curve but with recession there is unemployment and the economy now operates at a point in the area inside the curve, indicating that production is less than that which is possible because some resources are not being used.

(b) Eliminating discrimination would move the economy from a point inside its production possibilities curve toward a point on the curve.

(c) If the curve is illustrating the tradeoff between private spending and government spending (or between military and consumer goods), then this should mean a movement along the curve in the direction of more private or consumer production and less military production.

Government spending in general could decrease, but if that were not the case, then the government might simply shift some funds from the military to other types of government spending and the point would not necessarily move at all on a curve depicting the tradeoff between government and private spending.

(d) Movement depends on where the money is coming from. If the money comes from increased taxes or borrowing, then there is a movement along the curve away from private spending and toward public spending. If the money comes from other government programs and the curve is illustrating government versus private spending, the amount of total government production would not necessarily change, so the point could remain at the same spot on the curve.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-27 Production Possibilities Table*

321. Evaluate. Since the production possibilities curve can shift outward over time, it is possible for an economy to get more of a product without incurring an opportunity cost.

Outward shifts of the production possibilities curve occur if factor supplies increase or if technology advances. Both these changes, however, are not without cost. Increases or improvements in factor supplies involve tradeoffs. For example, a nation can increase its stock of capital by forgoing some goods for the present. Likewise, an increase in natural resources requires the use of resources for exploration and development that could have been used to produce goods for the present. Similarly, technological advancement is the result of employing resources with alternative uses in research and development.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-27 Production Possibilities Table*

322. One application of the production possibilities concept has been to explain the difference in growth patterns of a nation with a high level of investment (Alta) and an equivalent nation with a low level of investment (Zorn). Use the concept to explain why Alta's economic growth would be greater than that of Zorn over time.

The application suggests the tradeoff illustrated by a production possibilities curve with consumption spending on one axis and investment spending on the other axis. In Alta the combination of consumption and investment spending is heavily weighted toward investment. In Zorn investment spending is a smaller percentage of domestic output. If investment were measured on the vertical axis and consumption on the horizontal axis, Alta's optimal selection would be much higher on its production possibilities curve than would be the selection in Zorn. As a result of this larger proportion of income spent on investment goods, Alta's capital resource base and its economy grow more rapidly, which means its production possibilities curve shifts outward at a more rapid pace over time.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-27 Production Possibilities Table*

323. The production possibilities curve suggests that a nation cannot live beyond its means or production potential. Explain why international trade would cause this statement to be modified.

International trade allows for greater specialization and production. This activity has the effect of increasing the quantity and quality of resources, using resources more efficiently or improving output through the use of new production techniques. Thus, the gains from international specialization and trade are the equivalent of economic growth.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-29 Law of Increasing Opportunity Costs*

324. Why do economists use graphs in their work?

Economists use graphs to illustrate the relationship between economic variables in a visual format which often is more efficient than explaining the relationship in words. By seeing the relationship in graphical format, the reader (viewer) is able to readily describe the relationship.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-30 Shape of the Curve*

325. In a two-dimensional graph showing the relationship between income and consumption in the economy, what is shown on the vertical axis and what is shown on the horizontal axis?

In the typical two-dimensional graph, the vertical axis measures the dependent variable, which in this case would be consumption. The horizontal axis measures the independent variable, which in this case would be income.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-31 Economic rationale*

326. Define what is meant by a positive or direct relationship between two variables and describe the line graph depicting such a relationship.

A positive or direct relationship between two variables describes a situation where the two variables change in the same direction. If the first variable increases, the second variable increases; if the first decreases, the second decreases. An example would be individual income and spending. Generally, high spending is associated with high incomes and lower spending is associated with lower incomes. The line graph of a direct, positive relationship is upward sloping from left to right.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-32 Optimal Allocation*

327. Define what is meant by an inverse relationship between two variables and describe the line graph depicting such a relationship.

An inverse relationship describes a situation where the two variables change in opposite directions. When the first variable increases, the second variable decreases and vice versa. An example would be product price and quantity demanded of the product. Other things being equal, the higher the product price, the less will be purchased. The line graph of an inverse relationship has a negative slope; that is, it is downward sloping from left to right.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-32 Optimal Allocation*

328. Differentiate between the independent and dependent variables in an economic relationship.

The dependent variable changes as a consequence of the change in the independent variable. By specifying one variable as the dependent variable, a causal relationship is implied with changes in the independent variable causing changes in the dependent variable. The dependent variable is the "effect" or outcome.

*Accessibility: Keyboard Navigation*

*Difficulty: Easy*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-33 Unemployment, Growth, and the Future*

329. Describe the slope of a direct and an inverse relationship.

The ratio of the vertical change (the rise or fall) to the horizontal change (the run) in moving between two points on the line is called the slope of the line. The slope of an upward sloping line is positive, reflecting a direct relationship between two variables; the slope of a downward sloping line is negative, reflecting an inverse relationship.

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-35 Increases in Factor Supplies*

330. Show graphically the relationships that you would expect to find between (a) student IQs and grade point averages (GPAs); (b) the price of a product and the amount consumers will purchase; (c) the temperature and the number of people at the swimming pool. Which of these are direct relationships and which are inverse? What considerations might change the expected relationships?

The direct relationships expected are (a) IQs and grade point averages, and (c) the temperature and the number of people at the pool.

These relationships could change if external conditions were changed to affect these relationships. For example, in (a) if high IQ students were forced to take the most difficult classes, the direct relationship might disappear; in (b) if high-priced products became very fashionable and were of far superior quality, people might actually buy more when prices rose; in (c) if the number of people in the pool was limited to a low number or if air pollution alerts accompanied high temperatures, the direct relationship between temperature and pool attendance might change.

*Accessibility: Keyboard Navigation*

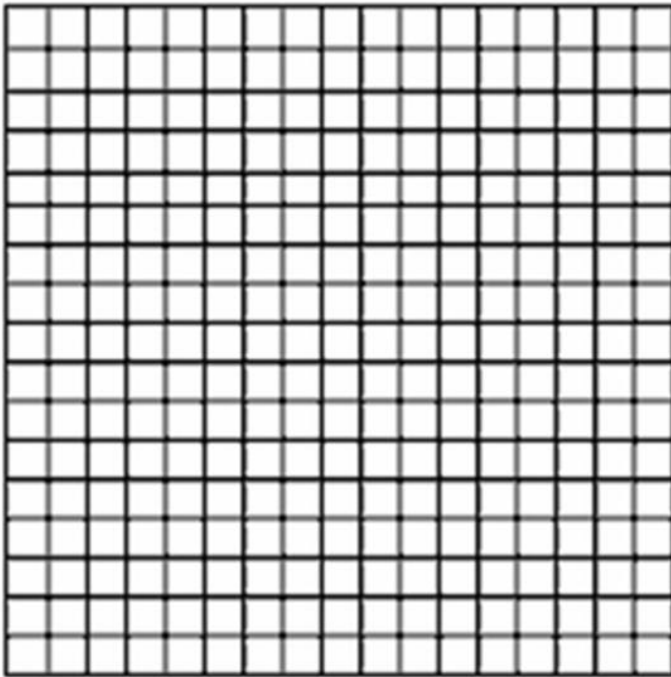
*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-31 Economic rationale*



331. Show graphically on the below graph the expected relationship between investment spending and interest rates. Put investment expenditures on the horizontal axis and the rate of interest on the vertical axis; connect the points and label the curve "Investment demand". Describe this relationship between the rate of interest and investment expenditures. Describe the slope of the investment curve.



The relationship between the interest rate and investment expenditures is inverse. The slope of the investment curve is downsloping or negative.

*Difficulty: Easy*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-31 Economic rationale*

332. There are two sets of  $x, y$  points on a straight line in a two-variable graph with  $y$  on the vertical axis and  $x$  on the horizontal axis. What would be the linear equation for the line if one set of points was  $(0, 12)$  and the other set was  $(12, 36)$ ?

The linear equation is  $y = 12 + 2x$ .

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-37 Present Choices and Future Possibilities*

333. The value of the vertical intercept is \$100 and the slope is 0.8 in a linear equation for consumption (measured on the vertical axis) and disposable income (measured on the horizontal axis). If disposable income is \$1000, what is consumption? State the linear equation and show how you found the answer.

The linear equation is  $\text{consumption} = \$100 + 0.8(\text{disposable income})$ . When disposable income is \$1000, consumption is  $\$900 = 100 + 0.8(\$1000)$ .

*Accessibility: Keyboard Navigation*

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-37 Present Choices and Future Possibilities*

334. How do you determine the slope of a nonlinear curve? Will the slope be the same along the curve? Explain.

The slope of a curve at any point is determined by calculating the slope of a straight line tangent to the curve at that point. The slope will change as you move along the curve. The curve has a different slope at each point.

*Accessibility: Keyboard Navigation*

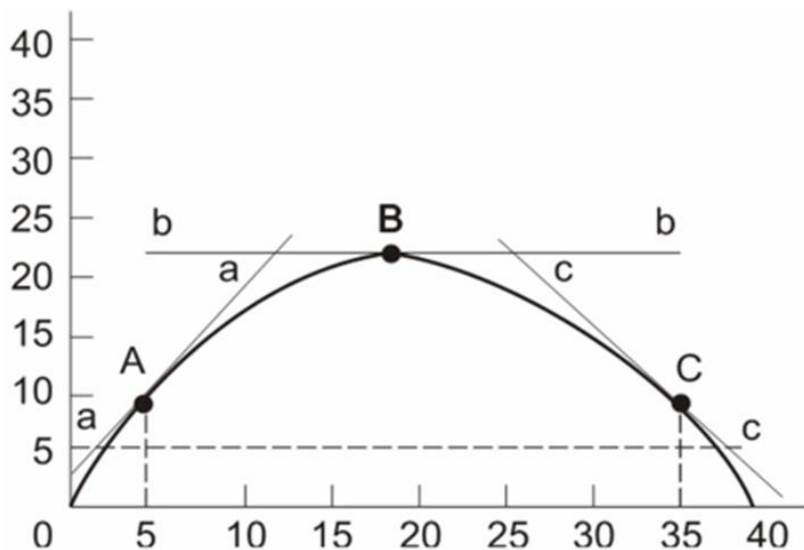
*Difficulty: Easy*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-38 A Qualification: International Trade*

## Chapter 01 - Limits, Alternatives, and Choices

335. Using the below graph give the slopes of the lines tangent to the curve at points A, B, and C.



To find the slope, choose two points on the tangent line and divide the vertical distance between the two points by the horizontal distance. The tangent line aa passes through (5, 10) and (0, 3). Therefore, the slope at point A is  $7/5$  or 1.4. The slope at point B is zero. The tangent line cc passes through (35, 10) and (31, 15). Therefore, the slope at point C is  $-5/4$  or -1.25.

*Difficulty: Medium*

*Learning Objective: 01-08 Explain how economic growth and international trade increase consumption possibilities.*

*Topic: 01-38 A Qualification: International Trade*