Learning about economics will provide you with the knowledge, understanding and skills you will need to succeed

Whether you want to one day start your own business, work for a major international company or a government, become a teacher or doctor, or run a charity, the study of economics will provide you with the knowledge, understanding, critical thinking and skills you will need to succeed.

The newspapers often describe complicated economic problems such as inflation, unemployment, balance of trade deficits, anti-competitive behaviour, changes in exchange rates, economic recessions and supply shortages. It is sometimes difficult to understand these and what impact they could have on our daily lives without an understanding of economics.

People who have studied economics are good at problem solving because they learn to identify problems, to suggest alternative solutions, to determine what information is relevant, and to weigh up different costs and benefits in decision making.

Knowledge of economics also helps us understand what determines the prices of different products, why people earn different amounts in different jobs and why these can change over time, why some countries are poor and others are rich and how and why governments influence the behaviours of different groups of consumers and producers. But above all, the study of economics makes us realize that we are all dependent upon one another and that the decisions we make will affect others.

By studying for the Cambridge Assessment International Education IGCSE or O Level in Economics you will therefore develop valuable lifelong skills including:

- an understanding of economic theory, terminology and principles
- the ability to apply the tools of economic analysis to real-world situations
- the ability to distinguish between facts and personal judgements in real economic issues
- an understanding of, and an ability to use and interpret, basic economic data, numeracy and literacy
- the ability to take a greater part in decision-making processes in everyday life
- an understanding of the economies of developed and developing nations
- an excellent foundation for more advanced study in economics.

Complete Economics will help you to build these skills quickly. It contains everything you need to master the content of the Cambridge IGCSE and O Level Economics courses in an enjoyable and exciting way by providing real insight into how different markets and entire economies work.

Final examinations will assess your skills and knowledge of economics

At the end of your Cambridge IGCSE or O Level course in Economics you will take two papers:

<table>
<thead>
<tr>
<th>Paper 1 Multiple choice</th>
<th>45 minutes</th>
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</thead>
<tbody>
<tr>
<td>Candidates answer 30 multiple choice questions.</td>
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<td>30% of total marks.</td>
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<table>
<thead>
<tr>
<th>Paper 2 Structured questions</th>
<th>2 hours 15 minutes</th>
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<tbody>
<tr>
<td>Candidates answer one compulsory question that requires them to interpret and analyse previously unseen data relevant to a real economic situation, and three questions from a choice of four.</td>
<td></td>
</tr>
<tr>
<td>70% of total marks.</td>
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</tbody>
</table>

The following key skills will be assessed in the examination papers.

<table>
<thead>
<tr>
<th>Knowledge and understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show your knowledge and understanding of economic definitions, formulas concepts, principles and theories</td>
</tr>
<tr>
<td>Use economic vocabulary and terminology.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select, organize and interpret data</td>
</tr>
<tr>
<td>Use economic information and statistics to recognize patterns in data and to deduce economic relationships</td>
</tr>
<tr>
<td>Apply your economic knowledge and understanding to written, numerical, diagrammatic and graphical data</td>
</tr>
<tr>
<td>Analyse economic issues and situations, identifying causes and links</td>
</tr>
</tbody>
</table>
Evaluation

Evaluate economic information and data
Distinguish between economic analysis and reasoned statements
Recognize uncertainties of the outcomes of economic decisions and events
Communicate your economic thinking in a logical and concise manner.

The requirement to demonstrate evidence of the key skills in the different examination papers varies. The importance placed on each skill in each examination paper is as follows:

<table>
<thead>
<tr>
<th>Assessment objective</th>
<th>Paper 1 (%)</th>
<th>Paper 2 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Knowledge with understanding</td>
<td>50</td>
<td>35</td>
</tr>
<tr>
<td>B: Analysis</td>
<td>50</td>
<td>35</td>
</tr>
<tr>
<td>C: Evaluation</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Complete Economics contains a wealth of exam preparation questions for you to practise to help you develop these key skills. Model answers to help you attain top marks for all the questions in this book are provided on the support website.

Best of luck with your studies and examinations!

Note
Unless otherwise reported all $ figures quoted in the text are US dollars. In many cases the $ sign is used simply to denote a unit of money and could therefore represent any currency. This is also because many other countries use a dollar sign to denote their currency, such as the Australian dollar, the Bahamian dollar and the Canadian dollar. However, real world examples of values quoted in $ are always actual US dollars unless otherwise stated.

Wherever you see an arrowhead symbol followed by numbers at the end of a paragraph they are referring you to look at other units in the book that contain related information and further explanation on the concepts you have just covered. For example, ➤ 3.1.2 suggests you should look at Unit 3.1.2 on Banking.
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• Guidance and answers to all the activities and exam preparation exercises in this book
• Answers to all the end of chapter assessment exercises in this book
• Printable versions of all the crosswords in this book along with their solutions
• An economics dictionary containing definitions for all the essential terms used in the course

www.oxfordsecondary.com/9780198409700
## Matching chart

<table>
<thead>
<tr>
<th>Syllabus overview</th>
<th>Unit in Student Book</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PART 1 The basic economic problem</strong>&lt;br&gt;1.1 The nature of the economic problem&lt;br&gt;1.2 The factors of production&lt;br&gt;1.3 Opportunity cost&lt;br&gt;1.4 Production possibility curves (PPC)</td>
<td><strong>PART 1 The basic economic problem</strong>&lt;br&gt;1.1 The nature of the economic problem&lt;br&gt;1.2 The factors of production&lt;br&gt;1.3 Opportunity cost&lt;br&gt;1.4 Production possibility curves (PPC)</td>
</tr>
</tbody>
</table>
The resources available to produce goods and services are scarce compared with our limitless wants. Land (natural resources), labour (human effort), capital (human-made resources) and enterprise (the knowledge and skills people need to organize production) are all scarce resources. They are factors of production because they are organized into firms by entrepreneurs to produce goods and services to satisfy our needs and wants.

Resources are inputs to productive activity and products (goods and services) are outputs from productive activity. However, because there are not enough resources to produce everything we need and want, we must make choices. For example, if we choose to use up scarce resources in the production of cars, those same resources cannot be used to produce food. This opportunity is foregone.

Making a choice between alternative uses of scarce resources therefore always involves a cost in terms of what we have to give up in return. The benefit of the next best alternative foregone is the opportunity cost of that decision.

Scarcity of resources relative to human wants is the basic or central economic problem. The study of economics therefore involves examining and informing decisions about how best to use scarce resources in an attempt to satisfy as many of our needs and wants as possible to maximize economic welfare.
### The nature of the economic problem

### Unit 1.1  The nature of the economic problem

#### 1.1.1 Finite resources and unlimited wants
- Define the economic problem and provide examples of how it affects consumers, workers, producers and governments.

#### 1.1.2 Economic and free goods
- Explain the difference between economic goods and free goods.

### Unit 1.2  The factors of production

#### 1.2.1 Definitions of the factors of production and their rewards
- Using examples, define the factor inputs used in production – land, labour, capital and enterprise.
- Describe the different factor payments or rewards received by factors of production.
- Use examples to explain the nature of each factor of production.

#### 1.2.2 Mobility of the factors of production
- Identify the influences on the mobility of the various factors of production.

#### 1.2.3 Quantity and quality of the factors of production
- Describe the causes of changes in the quantity and quality of the various factors of production.
Finite resources and unlimited wants

Economic and free goods

The newspaper article above paints a gloomy picture of what could happen in the future. It is hard to imagine a world without oil but even now there is only a limited amount of oil left in the ground. In other words, it is finite or limited in supply. As more and more is used up there will come a time when no oil remains. The world’s oil took many millions of years to form but we may use it all up in a few hundred years.

However, it is not just oil that is finite. Some forecasters suggest if we continue to consume goods and services in the future at the same rate as we do today many natural resources, such as aluminium, copper, lead, tin, zinc, and timber from the last remaining rainforests, will all be used up within the next 50 years. Even the land we farm or build on, and the clean air and drinking water we need are all finite or limited in supply.

If you imagine the world as a round ball then it is possible to see that only a limited amount of these resources can be squeezed from it.
The basic economic problem

Resources are important because they are used to make **goods** such as bread, televisions, cars, fruit and vegetables, and to provide **services**, including banking, insurance, transport, healthcare, policing and cleaning.

**Production** therefore involves using resources to make and sell different goods and services. Resources such as natural materials, land, machinery and workers, are the **inputs** to productive activities and goods and services are their products or **outputs**. ➤ 3.6.3

Any activity that fails to satisfy a human need or want is not a productive activity according to economists. So, for example, if resources are used to make clothes nobody wants to wear, televisions that fail to display moving images, clocks that cannot keep time or any other good or service that fails to satisfy a human need or want, then those resources have not been used productively.

The people and organizations which make and sell goods and services are known as **producers**.

Resources used to produce other goods and services include natural materials, people, machinery and land.
The nature of the economic problem

So what if the resources we use to produce goods and services are limited in supply? The world is a big place and it may take many years for non-renewable resources like oil, coal, gas, copper and iron to run out.

We can also renew or replace other resources such as trees for timber, corn to eat and people to work in shops, offices and factories. In fact, the population of the world is growing rapidly. A larger global workforce will be able to produce more machines, build more factories and invent new materials and better ways of producing food and other goods and services.

Does this mean limited resources is not such a big problem? Before you agree or disagree, look at Activity 1.1 below.

**Definitions of the factors of production and their rewards**

**ACTIVITY 1.1**

**Needs and wants**

Look at the two photos A and B. Photo A represents modern city life; photo B shows a group of people living in a poor African village.

1. What needs have the two families in common?
2. Which family will not be able to satisfy all its needs?
3. What do you think are the wants of the family in picture A?
4. What do you think are the wants of the family in picture B?
5. Why can’t the wants of either family be satisfied?
6. What do you think are the main differences between needs and wants?
7. If the world population continues to grow, what do you think will happen to the total of human needs and wants over time?
The basic economic problem

Human needs and wants

All people have the same basic **human needs**. Whether rich or poor, we all need food, clean water and some shelter from the extremes of weather in order to live safely and to survive. However, people usually want far more than they need. We want fashionable clothes, big televisions, smartphones, cars, holidays, insurance and banking services, and much more. However, unlike our human needs we do not need to satisfy our **human wants** to survive.

Just imagine if we could list all the goods and services that everyone in the world wanted. The list would go on forever and would grow longer as the world population expands. Our human wants are therefore without limit and it is not possible to satisfy them all. This is because there will never be enough resources in the world to do so. Resources are scarce compared to our unlimited wants for goods and services. Some people cannot even satisfy all of their basic needs because of the scarcity of resources.

### ACTIVITY 1.2

**What do we need and what do we want?**

Below is a jumbled collection of different goods and services. Draw a table like the one below and sort them into needs and wants, giving reasons for your choice.

<table>
<thead>
<tr>
<th>Needs</th>
<th>Wants</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread</td>
<td>Television</td>
<td>Bread is food. Televisions provide entertainment but are not essential for survival</td>
</tr>
</tbody>
</table>

You should now understand the difference between needs and wants. Write a sentence to explain what these two words mean.
Free goods are items we may need or want that are without limit. For example, air is so abundant in supply that you can breathe it without reducing the amount available to other people. Similarly, there is enough natural light during every day for everyone to enjoy as much as they want without it running out. As such, there is no point paying for air or natural light if they are freely available and without limit.

Many ideas and inventions are also free goods. For example, new dance moves or yoga exercises can be copied freely by one or more people without reducing the ability of others to do the same. Similarly, when you view a webpage it does not prevent other people from viewing it, although if everyone in the world did so at the same time it might crash the internet.

However, there are very few truly free goods. Most of the goods and services we need and want are limited in supply compared to our demand for them. This is because our wants are without limit and there are just not enough resources available to produce everything we want. We must therefore choose what goods and services to produce with our scarce resources. For example, producing more cars will leave fewer resources available to produce computers. ➤ 1.3.2

Unlike free goods, cars and computers along with most other goods and services are economic goods. This is because they are limited in supply. If you drive a car, use a computer or even wear a coat or eat a cake, these goods will no longer be available to others to use. Because they are limited in supply people are therefore willing to pay to obtain these and other economic goods in order to satisfy some of their wants.

What is consumption?
We consume goods and services when we use them to satisfy our human needs and wants.

When we eat we are consuming food. When we watch television we are consuming electricity, the television set and the services of a television company. When we go to schools and colleges, we are consuming the services of teachers. We are consuming when we read books, sit on chairs, sleep on beds, put money into a bank account, ask a policeman the time, listen to the radio and use up any other goods and services in order to satisfy our wants.

Consumption therefore involves the using up of goods and services to satisfy human needs and wants.
The basic economic problem

However, because these goods and services are finite we will be unable to satisfy all of our wants. We must all therefore choose which goods and services we will consume. The choices we each make will also affect other people. This is because our consumption of economic goods will result in fewer economic goods being available to other people. This is because economic goods are limited in supply.

The people and organizations which buy economic goods and services to satisfy their wants are known as consumers and the total amount they spend each period on economic goods is called consumption expenditure. ➤ 3.2.1

**What is exchange?**

Some people may be able to satisfy some of their wants by producing a number of goods and services for their own consumption. For example, keen gardeners may grow vegetables to eat to satisfy part of their need or want for food. Others may make furniture from wood for their families to use.

However, very few people can make all the things they want. Consumers must therefore engage in trade or exchange with producers to obtain those economic goods they cannot produce themselves. In modern economies most people are able to do this by going to work to earn money. They then exchange this money for the goods and services they want that are produced by other workers. ➤ 3.1.1

Different goods and services satisfy different needs and wants. Economists group together different products into four main categories.

**Consumer goods or capital goods?**

We can choose to use scarce resources to produce many different types of consumer goods and services. However, scarce resources can also be used to produce capital goods. Allocating more resources to the production of capital goods will therefore reduce the amount of resources available to produce consumer goods and services.

A consumer good is an economic good that satisfies an immediate consumer need or want. Some consumer goods are called consumer durables because they last a long time, for example cars, washing machines, televisions, furniture and computers. They can be used repeatedly over many months or years to satisfy a want before they eventually wear out. In contrast, non-durable goods are perishable or used up quickly, for example food, drink, matches, petrol and washing powder.

However, not all of our wants can be satisfied with physical products. We also want firms to provide us with services. For example, we may want the services of doctors, bankers, insurance agents, window cleaners and teachers. They provide consumer services.
**Capital goods** such as screwdrivers, drills, tractors, lorries, power stations and factory buildings do not satisfy any immediate human needs or wants. They are human-made resources used in the production of other goods and services.

The purchase of capital goods is known as investment. Investments in capital goods, like factories and machines, will increase the capacity of organization to produce goods and services. ➤ 1.4.4

So, we now know what the central problem in economics is.

The scarcity of resources relative to human wants is the central problem in economics. Scarcity means we must all make choices about how we use our limited resources. That is, we must decide what goods and services we will produce and consume. ➤ 2.2.2

▲ The economic problem
The basic economic problem

The scarce resources we use up in the production of goods and services to satisfy human needs and wants are also known as factors of production. In addition to natural resources, such as timber, coal and many crops, they include the people who go to work or run business organizations and the buildings, machinery and equipment they use.

All these resources or factors of production are scarce because the time people have to spend working, the different skills they have and the land on which factories, shops and homes are built are all limited in supply and scarce relative to our unlimited wants. Still not convinced? Just take a look at some of the real newspaper headlines on the next page.

ACTIVITY 1.3

What’s the big problem?
The economic problem affects every person and every organization in the world. Explain how the following situations illustrate the basic economic problem.

- Local anger as an area of ancient woodland is sold to a property developer to build new homes.
- BMW halts car production
  German car producer BMW has been unable to complete the production of thousands of cars this week due to a shortage of steering systems from its supplier Bosch.
- ‘One meal a day’: Consumers on low incomes are being forced to choose between food and paying power bills
  Welfare organisations are warning that many consumers on low incomes are struggling to pay their electricity bills as prices continue to rise.
  For some people, things have become so desperate that they are going without essentials like food and medicine to try and meet their bill payments.
- China closes mines and warns its rare-earth minerals are running out
  China has cut exports of rare-earth minerals to Japan, Europe and the United States, undermining high-tech manufacturers that rely on the minerals for the production of wind turbines, smartphones, missile-guidance systems and many other electronic goods.
  China controls the production of more than 90 percent of the world’s rare-earth minerals and claims its reserves may be exhausted in the next 20 years.
- Building new schools ‘must be top priority’ for government
  Hundreds of extra schools could have to be built in England to cope with the school population bulge, say public sector buildings specialists.
  Official figures suggest there will be almost 730,000 more school age children by 2020 than there were last year.

What are factors of production?
The scarce resources we use up in the production of goods and services to satisfy human needs and wants are also known as factors of production. In addition to natural resources, such as timber, coal and many crops, they include the people who go to work or run business organizations and the buildings, machinery and equipment they use.

All these resources or factors of production are scarce because the time people have to spend working, the different skills they have and the land on which factories, shops and homes are built are all limited in supply and scarce relative to our unlimited wants. Still not convinced? Just take a look at some of the real newspaper headlines on the next page.
Economists group together different factors of production under four main headings.

**Land**

The fertile soil vital to the growth of plants, minerals such as coal and oil, and animals for their meat and skins, are known as natural resources, but to simplify economists call all of these land. Land therefore includes the seas and rivers of the world, trees and plants, all manner of minerals from the ground, chemicals and gases from the air and what we usually think of land (those surfaces on our planet which we use for farming or to build houses, factories and roads upon).

**Labour**

Nothing can be produced without people. They provide the physical and mental effort required to design, make and sell goods and services. People who work with their hands and use their brains to produce economic goods and services provide human resources, or labour.

The size and ability of a country’s labour force are very important in determining the quantity and quality of the goods and services that can be produced. The greater the number of workers, and the better educated and skilled they are, the more a country can produce.

**Enterprise**

While most people are able to contribute to the production of goods and services as workers and employees, not everyone can successfully combine different resources and organize production in a firm. A firm is an organization that employs resources to produce and supply goods and services. ➔ 3.5.1

The ability to organize production in a firm is known as enterprise. The people who have enterprise and ‘business know-how’ and are able to control and manage firms are called entrepreneurs. They are the people who take the risks and decisions necessary to make firms run successfully.

**Capital**

To make the task of production easier, we have invented many tools: pens to write with, computers to calculate, screwdrivers, spanners, hammers, rulers, and many more. On a grander scale, turbines drive engines, tractors plough
the land, railways and ships transport goods, lathes shape and refine metals and wood, and factories, offices and airports have been built. All the human-made resources used to produce other goods and services, are known as capital.

Economists tend to talk of units of factors of production. For example, an economist might say that ‘a firm has employed 30 more units of capital’. This could simply mean that it has bought 30 new identical machines. Similarly, if an economist refers to units of land, it could mean tonnes of coal, barrels of crude oil, or hectares of land. Likewise, employees or the individual hours they work are units of labour for an economist.

**ACTIVITY 1.4**

Classifying resources

1. Below is a list of many of the scarce resources that are used to produce cartons of orange juice. Draw three columns and label them natural resources, human resources and human-made resources, and then in pairs decide in which column each item should go.

<table>
<thead>
<tr>
<th>Natural Resources</th>
<th>Human Resources</th>
<th>Human-Made Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephones</td>
<td>Advertising people</td>
<td>Oil</td>
</tr>
<tr>
<td>Cotton for clothing</td>
<td>Cotton for clothing</td>
<td>Lorries</td>
</tr>
<tr>
<td>Fertile soil</td>
<td>Squeezing machines</td>
<td>Orange trees</td>
</tr>
<tr>
<td>Orange pickers</td>
<td>Package designers</td>
<td>Printers</td>
</tr>
<tr>
<td>Water</td>
<td>Calculators</td>
<td>Warehouse workers</td>
</tr>
<tr>
<td></td>
<td>Calculators</td>
<td>Lorry drivers</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>Water</td>
</tr>
</tbody>
</table>

2. Now try to produce a list of resources you think are used to produce cars. Compare your list with the rest of the class, and again sort them out into natural, human and human-made resources.

**What are factor rewards?**

Since productive resources are scarce, firms are willing to pay money to obtain them. Few people provide their labour for free. Similarly, few owners or producers of natural and human-made resources will provide them to other producers without payment. Even entrepreneurs are unlikely to set up and start firms without reward for their efforts.

**Factor rewards** are therefore the payments different factors of production require and receive in order to participate in productive activity.

**Rent**

Owners of land require the payment of rent to supply these resources to firms, for example, for the purpose of farming, producing timber or extracting fossil fuels, metal ores and minerals. Rent is also required by owners of buildings, such as office blocks, to lease them to organizations.
Wages
People will supply their labour to firms in return for payments called wages. Some people may be paid a wage for every hour they work while others may receive a wage for every task they complete. Different workers may receive very different wages depending on where they work, what job they do and the skills they have. ➤ 3.3.2

Interest
Investments in capital goods such as factory buildings and machinery are expensive and must be financed. The money invested or ‘employed’ in capital goods by firms is therefore also called capital. Interest is paid to people and organizations that supply or invest capital in firms. The interest is what the people and organizations charge for supplying the money. ➤ 3.1.2

Profit
To organize production in a firm an entrepreneur must pay out rents, wages and interest to the suppliers of the factors of production it needs. These are its costs of production. ➤ 3.7.1

A firm must be able to generate enough income or revenue to cover its costs of production if it is to continue making and selling its products. A firm that earns more revenue from the sale of its products than it costs to produce them will therefore have a surplus left over after all its costs have been paid. This surplus is a profit. It is the reward entrepreneurs receive for successfully organizing production in a firm.

However, not all entrepreneurs will earn a profit. Some may even make a loss if their costs exceed their revenues. ➤ 3.7.5

Mobility of the factors of production

Quantity and quality of the factors of production
The economic problem can never be solved: resources will always be scarce relative to limitless human wants. However, changing the way in which resources are used or increasing the amount and quality of resources available can allow more goods and services to be produced and, therefore, more wants to be satisfied.

But how easy is it to change how scarce resources are used? And what affects the quantity and quality of resources available for production?

What is factor mobility?
Factor mobility refers to the ease with which resources or factors of production can be moved from one productive activity to another without incurring significant costs or a loss of output. For example, factors of production may be moved:
The basic economic problem

- Within a firm, for example, when an office assistant is moved from the human resources department to the finance department;
- Between firms in the same industry, for example, when one paint manufacturer closes but sells its machinery and equipment to another paint manufacturer;
- Between industries, as when a worker leaves employment at a clothing firm and begins work at a car factory;
- Between different countries, for example, when a doctor migrates to another country or when the head office of a bank is relocated overseas. The migration of workers to a country will increase its supply of labour but will reduce the supply of labour in the countries they leave.

The migration of workers to a country will increase its supply of labour but will reduce the supply of labour in the countries they leave.

The ability to move or reallocate factors of production between different productive uses in different locations is important for a number of reasons:

✔ Moving factors of production to more productive activities from less productive activities will increase their total output of goods and services.

✔ It allows different factors of production to be moved into their best possible uses. For example, it is a waste of resources to use a trained engineer to clean floors in a shop, or to use rich agricultural land that could be used to grow food to store old vehicles for scrap metal.

✔ It enables firms to improve the way they produce different goods and services as the quantity and quality of factors of production changes. For example, modern technology has meant that some tasks previously undertaken by labour can now be carried out quicker and cheaper by computerized machinery and robots.

✔ It allows firms to change the type of goods and services they produce as human needs and wants change. For example, concern for the environment has increased consumer demand for renewable energy. In response, resources have been moved into the production of wind turbines and solar panels.

Moving factors of production from one use to another is not always easy or without cost. For example, some workers have very specific skills, such as doctors. They may be good at providing healthcare but may be far less productive if they became farmers or construction workers. They would first need to be retrained and this can be expensive.

In fact, many workers are occupational immobile. This means they cannot change jobs very easily because they have specific skills. For example, train drivers could not become lawyers overnight without years of training and shop assistants would not be able to apply for jobs as skilled engineers.

In addition, many workers are geographically immobile because they are reluctant to move to jobs in different locations because of family ties or because moving home can be expensive.

Many natural and human-made resources also have specific characteristics or functions that may limit the range of productive activities they can be used for. For example, specialized asphalt-laying vehicles are designed to lay asphalt surfaces on roads and snow ploughs are used to move snow. They have no other use, but they can be used in different locations so they are not geographically immobile.

Why are some factors more mobile than others?

There are two main types of factor mobility:

- Occupational mobility or task mobility refers to the ability to move factors between different productive tasks.
- Geographic mobility is the ability to move factors of production to different locations.
Land is also geographically immobile and, in some areas, may have few alternative uses. For example, it is difficult to build on farm wetlands, on the slopes of mountains or in very cold regions of the world. However, it may be possible to use land in other areas to produce different crops each year or for dairy farming, to grow trees to provide wood or as parkland. It could also be built on to provide new houses or business premises but this may be costly and time consuming to achieve, especially if permission to do so is required from government.

However, many factors of production can move relatively easily between alternative productive uses. People often have many skills they can use in many different jobs in factories, offices and shops. Lorries can transport different goods for different firms to different locations and computers and other tools and equipment can be used in many different ways.

**ACTIVITY 1.5**

*Getting mobile*

Reproduce and complete the table below. For each of the productive resources listed: identify what type of factor of production they are; how their use in production is rewarded; how mobile you think they are and why (for example, how many alternative productive uses do you think they each have and how easy do you think it is to change their use?).

<table>
<thead>
<tr>
<th>Resource</th>
<th>Factor of production?</th>
<th>Factor reward?</th>
<th>Factor mobility?</th>
<th>Reasons for factor mobility?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer programmers</td>
<td>Labour</td>
<td>Wages</td>
<td>Quite mobile</td>
<td>Although they have very specific skills and cannot change occupation easily, general computer skills are used in so many different ways in different firms and industries</td>
</tr>
<tr>
<td>A combine harvester</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>An oil platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A woodland</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Some natural resources such as fossil fuels, metal ores and minerals are non-renewable, because they have taken many thousands or millions of years to form. We may be able to find and extract some further deposits over time but once they have all been used up they cannot be replaced. ➤ 1.1.1

However, other scarce resources are renewable. It may also be possible to increase both their quantity and quality over time so that more goods and services can be produced with them.

For example, more trees can be planted to increase the supply of wood. Woods and metals from old unwanted goods can also be recycled and re-used.

More machines and other capital equipment can be produced instead of consumer goods. New technology is also increasing the quality of capital equipment. The power and capabilities of computers has increased significantly in the last few decades and they are now used extensively to design products and control machinery in many modern production processes. Industrial robots are also replacing the jobs of some manufacturing workers who are then able to move into other productive uses.

Population growth is increasing the global workforce and training can teach workers new skills including how to run successful firms, how to improve production and how to reduce the amount of natural resources wasted during production. ➤ 3.6.3

Discovering new sources of natural resources and increasing both the quantity and quality of other factors of production available for productive use enables firms to:

- produce more goods and services;
- produce a wider range of goods and services;
- improve the quality of goods and services;
- invent new products and ways of producing them.

As a result, more human needs can be met and more human wants can be satisfied.

We can show the impact of changes in the quantity and quality of factor resources on production using production possibility curve diagrams. ➤ 1.4.4
### How the quantity or quality of a factor of production can be increased

<table>
<thead>
<tr>
<th>Factor of production</th>
<th>How can factor quantity be increased?</th>
<th>How can factor quality be increased?</th>
</tr>
</thead>
</table>
| **Land**              | • An increase in rents may persuade more landowners to release their land into productive uses  
                          • New discoveries of fossil fuels, minerals and other natural resources – and new equipment and techniques – can improve the amount it is possible to extract  
                          • Making use of other previously unused natural resources. For example, modern technologies have enabled us to use the sun, wind and other renewable resources to produce energy. This is reducing the amount of oil, gas and coal we need to burn to produce electricity.  
                          • Planting and growing more trees and plants  
                          • Recycling and re-using used vegetable oils and engine oils, and metal and wooden parts in durable consumer and capital goods that we no longer use or want | • Fertilizers and better land management can improve soil conditions allowing more crops to be grown  
                          • New technologies can improve the resilience of plants to drought and insect infestations  
                          • Reducing the use of chemicals in farming which can pollute water courses  
                          • Using organic and more humane animal farming methods can improve the quality of crops, meat and milk produced |
| **Labour**            | • An increase in wages may persuade more people to supply their labour to firms  
                          • An increase in the population of working age  
                          • Improvements in healthcare reduces the number of days people are absent from work due to sickness and will help people to live and work for longer | • Training and education can improve workforce skills and the amount, range and quality of goods and services people can produce |
| **Capital**           | • A decision by producers to produce more capital goods  
                          • An increase in interest payments will increase the amount of capital investors are willing to supply to firms | • Advances in technology have improved, and continue to improve, the speed and accuracy of modern equipment |
| **Enterprise**        | • An increase in the prices consumers are willing to pay for goods and services may increase profits and encourage more people to start firms  
                          • A fall in the number of paid jobs available and a rise in unemployment may result in more people starting up their own businesses instead | • More and better training courses for people wanting to become entrepreneurs  
                          • More and better business advice and support for new entrepreneurs |
Clues across

3. The ability to move factors of production from one productive use or location to others (6, 8)
5. Scarce resources used to produce other goods and services – they are the inputs to productive activities (7, 2, 10)
8. The using up of goods and services by consumers to satisfy their human needs and wants (11)
9. Skills possessed by successful entrepreneurs including the ability to organize resources into firms for the purpose of production (10)
12. Any resources of products that are limited in supply and scarce relative to human wants (8, 5)
14. Finite resources which cannot be replaced or replenished once they have been used up (3–9, 9)
17. Physical products with long useful lives, including cars and computers, that can be used repeatedly to satisfy a human need or want over many months or even years (9, 8)

Clues down

1. Human effort used up in productive activities (6)
2. The act or process of using resources to make and supply goods and services to satisfy human needs and wants (10)
4. The outputs or ‘products’ of productive activities (5, 3, 8)
6. Any resources or products that are unlimited in supply (4, 5)
7. People with enterprise skills who are willing to take the risks and decisions necessary to organize resources into firms for production (13)
10. Payments made to the owners of factors of production in return for supplying them to firms for productive use (6, 7)
11. Human desires for different goods and services – these desires are without limit and are increasing (5)
13. Basic human requirements for life and survival (5)
15. People and organizations who buy and use goods and services to satisfy their needs and wants (9)
16. All natural resources used in the production of other goods and services (4)
17. Human-made resources including machinery, tools and factory buildings, used in the production of other goods and services (7)
IN THIS UNIT

1.3.1 Definition of opportunity cost
- Define opportunity cost
- Use examples to demonstrate the opportunity cost of different economic decisions

1.3.2 The influence of opportunity cost on decision making
- Analyse how opportunity cost can affect decisions made by consumers, workers, producers and governments to allocate their resources to different productive uses or activities

1.4.1 Definition of a production possibility curve (PPC)
- Define and draw a production possibility curve (PPC)
- Use appropriate diagrams to demonstrate how PPCs can be used to illustrate the concepts of resource allocation and opportunity cost in firms and in an economy

1.4.2 Points under, on and beyond a PPC
- Explain the significance of different production points on or off a PPC

1.4.3 Movements along a PPC
- Evaluate movements along a PPC and their opportunity cost

1.4.4 Shifts in a PPC
- Identify and explain the causes and consequences of shifts in a PPC in terms of an economy’s growth
SECTION 1.3.1

Definition of opportunity cost

SECTION 1.3.2

The influence of opportunity cost on decision making

The central economic problem is that the resources we need to produce goods and services to satisfy our wants are scarce compared to our unlimited wants. As a result we cannot produce everything we want so we must choose what goods and services to produce and consume.

Choice is necessary not only because resources are scarce but because many can be used in different ways to produce different goods and services.

For example, many football clubs have spare land next to their grounds. The problem facing these clubs is to choose what to do with this land. They could build a sports complex or leisure centre to serve the local community, or a supermarket, or an apartment block or even an office complex. Whatever they do, they can only choose one of these options because land is a scarce resource.

What is opportunity cost?

For example, a piece of land can be used for agriculture or to build a motorway on

People and nations all over the world must therefore choose how scarce resources are to be used. That is, we must all choose which goods and services we will produce and consume because we cannot make everything we want.

The true cost of something is what we have to give up to get it. This cost is known as the opportunity cost. It is the benefit we could have enjoyed from the next best alternative we choose to go without.

For example, in Activity 1.6 below you were asked to state what you would go without to purchase the items in the first column. The goods or services you listed in column two are therefore your second-best choices or next best alternatives. You would forego their benefit in order to enjoy the items in column one. For example, you may have chosen to go without the benefit of a holiday in order to buy a large flat-screen television. The benefit of the holiday you have given up is the real cost of choosing to buy a large flat-screen television instead.
Every decision we make either as consumers or producers involves an opportunity cost because the resources we need to produce goods and services are limited in supply and scarce relative to our wants. Choosing one use of resources always means going without another. For example:

- Consumers must choose how much of their limited incomes to save and how much to spend. For example, if a consumer chooses to save $500 they have given up the opportunity to enjoy $500 of consumer goods and services instead. ‣ 3.2.1

- A family can choose to cover the floors of their home with carpets or tiles. If the family chooses to buy and fit carpets then it has decided to go without the benefit of tiled floors.

- Workers also face many choices. For example, Rafa chose to train as engineer in a local factory for which he is paid $600 per week. To do so he gave up his next best option to work as a gym instructor earning $500 per week in a local sports centre. His supervisor in the factory has now asked him if he wants to work an extra 10 hours each week. If he agrees, he will earn $200 more each week but will have to give up 10 hours of his leisure time. ‣ 3.3.1

- Producers must decide what goods or services they will produce, how much they will produce, how much money they will invest in their firms, where to locate them and how best to obtain and organize the resources they need for production. ‣ 3.6.1

For example, a group of entrepreneurs have purchased an area of land and raised $5 million to pay for the resources they need to build 20 new homes for sale or a new hotel. After considering the two proposals they decide the construction of a new hotel is their preferred option and the construction of new homes, the next best alternative use of $5 million of resources. This is because they estimate the hotel will be more profitable than the construction and sale of new homes. They are therefore willing to give up the profits they would earn from this next best alternative use of resources.

- Governments must determine how best to spend public money and how they will finance it. For example, should they spend more on providing schools and education or on the construction of new motorways? The
opportunity cost of building more motorways will be the foregoing of additional schools and educational services. Alternatively, a government may decide to increase taxes on the wages of workers and profits of entrepreneurs so that is able to finance the building of more schools and roads at the same time so that neither is foregone. However, the opportunity cost of doing so for taxpayers will be the amount of money they must give up from their incomes to pay higher taxes.  

All of the above decisions involve making choices because the goods and services we consume and the resources we use to produce them are limited in supply and scarce relative to our wants.

However, scarce resources are unevenly distributed within and between countries. Some countries have more resources than others. Therefore some consumers, workers, producers and governments have more choices available to them than others.

**ACTIVITY 1.7**

**Free to choose?**

1. Look at the photographs and copy the table below. Put a tick in the first column if you think the children in the first photograph are free to choose. Tick the second column if the boys in the second picture are free to choose.

<table>
<thead>
<tr>
<th>Free to choose? ✓ or X</th>
<th>First picture</th>
<th>Second picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can go to a soccer match.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can eat in a restaurant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can catch their own food.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can drive a car.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can visit foreign countries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can own their own house.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can obtain medical help when needed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can receive an Economics education.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can receive a daily paper.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can be independent.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can receive radio and television.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Which group of children do you think has more choice and why?

Based on the photographs, we assume that the boys in the second picture in Activity 1.7 have a greater choice of goods and services to enjoy than the children in the first picture. This is because the boys in the second picture live in a country which has far more resources to produce more of the goods and services people want.

The children in the first photograph have far less choice. There are fewer resources in their country that can be used to produce goods and services to satisfy their wants.
In some countries, many people may have very little choice. For example, in the poorest countries of Africa, not even basic needs for food can be satisfied with the available resources. This great difference in choice is caused by the relative lack of resources in the poorer countries. Yet in both rich and poor nations people want more resources than are available.  

The purpose of economics involves advising how best to use scarce resources in order to make as many goods and services to satisfy as many wants as possible. In other words, economics attempts to increase choice and maximize their economic welfare. When people have more goods and services to choose from, opportunity costs are reduced and they are better off. For example, the Western boys are better off than the children in Bangladesh simply because they have the ability to choose between and consume more goods and services.

Discuss how the two newspaper articles below illustrate the concepts of scarcity of resources and opportunity cost.

**Fears over the development of new homes**

Developers have submitted plans to build a total of 3,500 new homes in Northumberland.

There is currently a shortage of homes in the area. The project will create 500 affordable houses on the outskirts of Ponteland and enhance the town’s infrastructure.

However, local campaigners fear the development will destroy large areas of nearby agricultural land and woodland, and increase pressure on local schools and healthcare services.

“We are not against development”, said one local resident, “We know new homes need to be built but they should not be built upon open land. Once it has been developed it is lost forever”.

**People must choose between higher taxes or spending cuts**

PEOPLE IN Northern Ireland should be given an opportunity to vote on whether to accept spending cuts or pay higher taxes to save public services, according to a leading Northern Ireland economist.

Mike Smyth, president of an influential European Union economic think tank, believes the scale of the public expenditure cuts proposed by the UK government will result in a ‘severe decline in living standards’ in Northern Ireland.

However, government officials have argued the tax rises needed to continue paying for current levels of public service provision would also cause hardship for many people and businesses across the region.
Definition of a production possibility curve (PPC)

Points under, on and beyond a PPC

Movements along a PPC

ACTIVITY 1.8

The cost of making choices

A factory employs 10 people and has 2 machines able to produce and pack 300 glass bottles each day. The same employees and machines could instead be used in the same factory to make and pack 400 glass jars each day.

The same 10 employees used to work on a farm and were very skilled at growing and harvesting corn until the farm was sold and the factory was built on the farmland. Compared to the farm the factory is noisy and pollutes the air with smoke.

1. What is the opportunity cost to the factory owners of using the 10 employees and 2 machines to make 300 bottles each day?
2. What is the opportunity cost to the employees of working in the factory?
3. What is the opportunity cost to society of the factory?

What is a production possibility curve (PPC)?

The firm in the activity above can use all its factors of production to produce a maximum of 300 glass bottles or a maximum of 400 glass jars each day. Using all its resources to produce 300 bottles each day will however mean that the opportunity to use them to produce 400 jars instead is given up.

Additionally the firm could also choose to allocate some of its factor resources to the production of bottles and the remainder to the production of jars. We can plot all the different combinations of bottles and jars the firm can produce with its resources on a production possibility frontier or production possibility curve diagram (PPC).
The production possibility curve in the diagram shows all the production choices available to the firm assuming it uses all of its labour and other resource inputs as fully and as efficiently as possible to maximize their output.

At point A on the vertical axis the firm will be using all of its resources to produce 300 glass bottles each week. At point B it will be using all its resources to produce 400 glass jars each week. The opportunity cost of producing 400 jars each day is therefore 300 bottles foregone.

At any point on the PPC between A and B the firm will be using its resources to produce some combination of bottles and jars each week.

For example, if the firm chooses to produce at point C it will be producing 330 jars and 120 bottles each week.

Moving from point C to D will require the firm move some of its resources out of the production of jars and into the production of bottles. Doing so will allow the firm to produce an additional 80 bottles each week but at the loss of 100 jars. That is, the opportunity cost of producing an extra 80 glass bottles each week is the 100 glass jars foregone.

Moving even further along its PPC from point D towards point A will mean the firm moving even more of its resources into the production of bottles and giving up even more jar production. Its PPC therefore shows the opportunity costs faced by the firm when choosing between different allocations of its resources.

Now imagine that the firm is actually producing at point X below its production possibility curve. At point X it is producing just 150 jars and 100 bottles each week. However, we know from its PPC that it could produce 330 jars and 120 bottles each week at point C or 230 jars and 200 bottles each week at point D.

This is because at point X it is not using all of its resources and/or not used them as efficiently as possible. The same will be true of any other point of production below the PPC. For example, at point X some of its machines may be broken or they are only being used for 12 hours each day instead of being run continuously for 24 hours each day. Correcting these problems would therefore allow the firm to increase its total output of both bottles and jars.

However, it could not increase output to as far as point Y above its PPC. This is because its PPC shows the maximum possible output combinations of bottles and jars the firm can achieve when all its resources are fully and efficiently employed. Production at point Y or any other point above its PPC will therefore be unattainable unless the firm is able to either:

- improve the quality of its existing resources so they can produce more, for example, by training its workers to use more advanced production techniques and machinery; and/or
- increase the quantity of resources it employs, for example, by hiring more workers and investing in additional machinery.
The basic economic problem

Shifts in a PPC

Imagine we could add together all the different production possibility curves for all the different firms in different industries in a country. Doing so would derive the production possibility curve for that country or national economy.

What is an economy?
People and firms produce, exchange and consume goods and services in an economy. An economy is therefore any area in which the economic activities of production, exchange and consumption take place.

A village or small town will have a small local economy, but may be part of a much larger regional or even national economy. For example, Nairobi is the capital city within the national economy of Kenya. In turn, the Kenyan economy is part of the African economy in which all other African countries are included, such as Algeria, Cameroon, Egypt, Mauritius, Swaziland and South Africa. Similarly, all African national economies form part of the global economy along with the economies of all other countries in the world.

The size of a national economy is measured by the amount or value of all the goods and services it produces each week, month or year. An economy will therefore grow in size as it produces more goods and services.

The efficient reallocation of resources in an economy
The production possibility curve (PPC) in the diagram shows the total amount of consumer goods and capital goods a national economy can produce using its scarce resources. It shows the economy has enough resources to produce 1,000 tonnes of consumer goods or 800 tonnes of capital goods.

Or the economy can produce a combination of consumer goods and capital goods. The maximum combined amount of the two types of goods the economy can produce with its resources is shown by its PPC.
For example, let us assume that the economy is currently producing 650 tonnes of consumer goods and 500 tonnes of capital goods each day. This combination of outputs is marked on the PPC diagram.

To increase its output of capital goods by another 100 tonnes each day (to 600 tonnes) will require a reallocation of resources within the economy. Mobile factors of production will be moved out of firms producing consumer goods and into other firms producing capital goods. From the PPC for the economy we can see that this will result in a reduction in the amount of consumer goods produced each day by 150 tonnes (from 650 tonnes to 500 tonnes).

The opportunity cost to the economy of an additional 100 tonnes of capital goods is therefore the loss of 150 tonnes of consumer goods. ➤ 1.3.2

**Inefficient allocations of resources**

The diagram below is the PPC of another national economy. Its PPC shows all the maximum possible output combinations of consumer goods and capital goods it is capable of producing when all its scarce resources are fully and efficiently employed.

However, the economy is currently producing consumer and capital goods at point A, well below what it is capable of producing shown by its production possibility curve. This means it is not using all of its scarce resources or it is not using them in the best or most efficient ways possible. For example, many workers may be unemployed while others may be in jobs they are not trained for or skilled enough to do. Farmland, factory buildings, offices, machinery and other productive resources may be unused or idle.

If the economy made better use of its scarce resources it could increase its total output of both consumer goods and capital goods each year. For example, if it used all its resources efficiently the economy could produce the output combination at point B or C or at any other points along its PPC.
However, the economy is unable to produce output combinations D or E. These points lie outside of its PPC and therefore above the maximum possible output combinations of consumer and capital goods it can produce with its existing resources, production processes and technologies.

**An increase in the quantity or quality of resources available to an economy**

Firms in the economy will only be capable of producing more consumer goods and capital goods each period at points such as D and E if they have more resources to use or if the quality of their existing resources improves so that they become more productive.

An increase in the quantity and/or quality of factors of production available to the economy will move its PPC outwards (from PPC1 to PPC2) as shown below.  

**1.2.3**

Output combinations below the PPC occur when there are unemployed resources or they are used inefficiently. Output combinations above the PPC are unattainable with existing resources and technologies.

The PPC will move outwards as:
- more natural resources are discovered
- the supply of labour increases due to inward migration or natural population growth
- the stock of capital equipment is increased
- new technologies create new and more advanced materials, equipment and production processes
- education and training increases the skills of workers and entrepreneurs
- improvements in healthcare reduce days lost at work due to illness and accidents
- investment in modern business infrastructure, including road and telecommunication networks, is increased
An outward shift in the PPC shows that the economy has the capacity to produce more goods each period than it did before there was an increase in the quantity or quality of its resources.

If the economy uses this capacity to produce more goods than it did previously, the size of the economy will increase. This is called **economic growth.** ➤ 4.6.1

### A reduction in the quantity or quality of resources available to an economy

In contrast, if the economy suffers a decrease in the quantity or quality of its resources, its capacity to produce goods will shrink. This will cause its PPC to shift inwards (from PPC1 to PPC3 in the diagram below). Its total output of goods will fall and there will be **negative economic growth.**
ACTIVITY 1.9

Shift it!

1 According to the news articles below, which countries are most likely to have experienced (a) an increase in their resources and productive capacity, and (b) a decrease in their resources and productive capacity?

- Many developing countries are losing their better-educated nationals to richer countries including young healthcare workers and entrepreneurs.

- Mass migration to England is expected to increase the population by more than 4 million in the next decade, new government projections suggest.

- Approximately 75 percent of land in Uganda could be used for agriculture according to a new study. However, only around 30 percent of arable land is currently being cultivated. It is also estimated that up to 12 percent of output has been lost due to environmental degradation through soil erosion and nutrient loss.

- New oil reserves have recently been discovered in Canada, Norway, Cuba, Brazil, Russia and Israel.

2 What could prevent a national economy that has experienced an increase in its resources and productive capacity from increasing its total output of goods and services?
Clues across

2. An area such as a town, region or country in which the economic activities of production, consumption and exchange take place – its size can be measured by the total amount or value of goods and services produced within it each period (2, 7)

9. Physical products produced and supplied by firms in an economy to satisfy immediate consumer needs or wants (8, 5)

11. A graphical representation of the maximum output combinations of two goods that could be produced by a firm or an entire economy using its existing factor resources as fully and as efficiently as possible (10, 11, 5)

12. Factor mobility is required in an economy to move along its production possibility curve because it requires a reallocation of resources from one productive use to another. However, some workers have very specific skills which means they cannot easily be moved to different jobs requiring different skills. What is this problem called? (12, 10)

Clues down

1. Factors of production will have this characteristic if they are easy to relocate (12, 8)

3. These products do not satisfy an immediate consumer need or want – instead they are produced and supplied by firms in an economy to use in the production of other goods and services (7, 5)

4. The basic economic problem (8, 2, 9)

5. The real cost of choosing one use of scarce resources over another – it is the benefit from the next best alternative given up or foregone (11, 4)

6. These are paid to people to supply their labour to firms (5)

7. The reward for enterprise (5)

8. This type of factor reward is received by the owner of land in return for its use in production (4)

10. This will have occurred in an economy that is able to produce more goods and services each period than it did in previous periods – it refers to an increase in the size of an economy (8, 5)

13. Factor rewards received by the owners of capital that has been invested in firms (8)
**Multiple choice**

1. What is the basic economic problem?
   - A. Finite resources and limited wants
   - B. Finite resources and unlimited wants
   - C. Infinite resources and limited wants
   - D. Infinite resources and unlimited wants

2. Which statement best explains why drought is an economic problem?
   - A. Rainfall cannot be predicted easily
   - B. The effects of drought require government action
   - C. Droughts cannot be prevented
   - D. Water is a scarce good

3. New oil reserves are discovered. What has increased in supply?
   - A. Capital
   - B. Enterprise
   - C. Labour
   - D. Land

4. Which statement about the factors of production is correct?
   - A. Capital includes human-made machines that lose value over time to wear and advances in technology
   - B. Enterprise is a natural factor of production that cannot be taught
   - C. Labour is an immobile factor that does not change its skill level
   - D. Land refers only to farmland that cannot be improved by human effort

5. The following are four ways factors of production are used. What is likely to require the greatest use of the factor enterprise?
   - A. A carpenter making wooden articles in his leisure time for sale at a monthly market
   - B. A corn farmer negotiating with other farmers to hire expensive machinery
   - C. A food shop owner sometimes selling flowers in the shop
   - D. A householder harvesting vegetables grown at home

6. Hala makes cakes she bakes in her kitchen at home. She sells them at a local market. To produce more cakes she decides to invest in a larger oven and to employ someone to help.
   Which factors of production have changed?
   - A. Labour
   - B. Capital
   - C. Labour and capital
   - D. Enterprise and capital

7. A new dam is built in Turkey to provide hydroelectric power and a water supply. What is the opportunity cost to the country of building the dam?
   - A. The cost to households and businesses of consuming the water supply
   - B. The benefits foregone from other uses of the money used to pay for the dam
   - C. The cost to consumers of using hydroelectric power
   - D. The money used to pay for the construction and running of the dam

8. A social club has sold raffle tickets at US$10 each. The owner of the winning ticket received a prize of US$250. A student bought a ticket, but did not win. What is the opportunity cost to the student?
   - A. US$10
   - B. US$250
   - C. What could have been bought with the US$10
   - D. What could have been bought with the US$250

9. A firm can produce a number of possible combinations of two goods. It can either produce 500 of good x and 300 of good y, or 600 x and 250 y. What is the opportunity cost of producing an extra 100 of good x?
   - A. 100 y
   - B. 250 y
   - C. 50 y
   - D. The extra wages paid to the workers
10 In the diagram below what is the opportunity cost of increasing the output of wheat from 300 tonnes to 400 tonnes per month?

- A 800 tonnes of barley
- B 80 tonnes of barley
- C 120 tonnes of barley
- D 720 tonnes of barley

11 The diagram below shows the production possibility curve for an economy. Which point in the diagram represents the most efficient allocation of resources to the production of both consumer goods and capital goods in the economy?

- A An increase in wages
- B A better educated workforce
- C A decrease in the availability of natural resources
- D An increase in factor mobility

12 The movement in the production possibility curve from PPC1 to PPC2 in the diagram indicates there has been growth in the productive potential of an economy. What is most likely to have caused this?
Structured questions

1. In 2017, a series of powerful hurricanes destroyed many homes and factories in the British Virgin Islands. Rebuilding will take time and involve an opportunity cost as resources will need to be diverted from other uses. As a result, many people may decide to emigrate.
   A. Define *opportunity cost*. [2]
   B. Explain why it is impossible to solve the economic problem. [4]
   C. Using a production possibility curve diagram, analyse the effect of a reduction in the resources available to an economy. [6]
   D. Discuss whether a country will benefit from emigration. [8]

2. In 2012, the US Government approved spending of US$1.5 billion to send a third robotic exploration vehicle to Mars in 2020. Some economists argued that it would be better to use the same scarce resources including labour and enterprise, to improve education or to build more roads instead.
   A. Define *enterprise*. [2]
   B. Explain why scarcity of resources creates an opportunity cost. [4]
   C. Using a production possibility curve diagram, analyse the impact of an increase in education could have on an economy. [6]
   D. Discuss whether the construction and use of more roads will benefit an economy. [8]
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