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STUDY Mate

Department of Education

GRADES 8–11 ISSUE 7 AUGUST 2007

Learning activities for Grades 8–11

Reading Skills, Economics, Mathematical Literacy and more!

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Education Minister Naledi Pandor

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Dear Learner

We hope you will find this issue of Study Mate useful. We think that the lessons and activities will help you in your preparations for those very important end-of-year exams. The English lesson on reading skills is not only important in getting you to read and understand your schoolwork – it is a lifelong skill that you are sure to use for the rest of your life, no matter what career you follow. We have also given the economists among you a few brain exercises, and continue with our life sciences lessons on the impact of humans on the environment – something all of us can take note of! Finally we have a maths literacy exam paper so that you can practise the work you have done throughout the year. Remember, practice makes perfect!

READING SKILLS

With grateful acknowledgement to UNISA for the use of their English study materials.

We are going to look at different skills that good readers have developed.

1. Skimming

'Skimming' means reading through quickly for the general idea, to see what a book, text or article is about.

Some examples are:

- you can skim through a newspaper by looking at headlines and photo's to get an idea of the main news of the day;
- you can skim a particular article by reading the first paragraph and the beginning of each subsequent paragraph to see if it is of interest to you. If it is, you may want to read it in detail. If you don't have time to read the whole article, you will have a general idea about its subject;
- you can skim the contents page of a text book to see if it is suitable for your purposes.

The process of skimming involves reading samples of the text, a chunk here and there, and then predicting what the rest of the text is about. As you skim the next sample, you may need to correct or adjust your prediction. Each new sample gives you clues as to how the rest of the text will continue.

Exercise 1

You are planning on running a marathon in a few months' time. You are uncertain about what and how much to eat. You go to a bookshop to find a suitable book that will help you prepare for the race. The following is the contents page from a book entitled ***Sports Nutrition***. Look through it and decide if it is the right one. Say why or why not.

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(from *Sports Nutrition* by Louise Burke, OUP, Cape Town, 1998)

Exercise 2

Here is the heading, subheading and photograph heading to an article. The first paragraph and some words from each paragraph are also given. This is what you would read if you were skimming the whole article.

Read the extracts given below, and then answer the questions that follow.

VARSITIES TO MOUNT HUGE AIDS CAMPAIGN

Shock estimates of HIV infection on campuses have spurred the authorities into action

Student Aids awareness campaigns, like this one held on the Wits campus, do not seem to have been effective.

(Photo by R. Motau)

One in five university undergraduates is estimated to be HIV-positive; by 2005 the rate of infection could be as high as one in three. Now university vice-chancellors are mounting an urgent intervention on the pandemic and its threat to the nearly 500 000 students in South African public higher education.

Announcing earlier this week that Prof. ... announced ... secured more than R12-million ... to tackle HIV/Aids in tertiary institutions ...

"We must stem the tide of Aids," he ...

A preliminary government study indicates that 22% ...

The 18- to 30-year olds who make up ... most talented members of society ...

But they are also the age group at the highest risk ... many may arrive already infected ...

Grants will be awarded to tertiary institutions ...

... initiated a study last year ... how ... responding ... and found critical weaknesses ... there is still a 'persistent culture of silence and denial', inadequate capacity and resources, a narrow focus on prevention and little institutional planning to anticipate the impact of HIV/Aids.

The programme will also involve the national Department of Education.

(taken from *The Mail and Guardian* of 26 Oct to 1 Nov 2001)

1 What is the problem mentioned in the article?

2 What is going to be done about it?

3 What obstacles have to be faced?

2 Scanning

'Scanning' means reading through quickly to find something specific that you are looking for.

Some examples are:

- you scan a *telephone directory* to find the name and address and number you want;
- you scan an *index* to find the information you want;
- you scan a *passage* you have already read to locate something that you know is there, and want to reread, but you are not sure exactly where to find it.

Exercise 3

1 Take a telephone directory and scan it until you find the name G. van der Merwe. What is the surname immediately before the van der Merwes? What is the surname immediately after them?

2 Scan the Contents of the book on Sports Nutrition on pages 63 to 64.

(a) Find the heading "Losing body fat". What page will you find it on?

(b) Which sections are going to be most useful for your general diet during the year?

(c) Which sections would you read to find out what you need to eat and drink during a long-distance event?

(d) Which sections would you read to find out what to do about recovering after a big race?

Exercise 4

Scan the articles on the left to answer the questions on the right.

World in brief

- **Troops opened fire** on villagers in central Nigeria and razed four communities, killing at least 200 people. The massacre began on Monday in Gbeji and spread to neighbouring Vaase, Anyiin and Zaki-Bian near the place where the bodies of 10 soldiers were found hacked to death on October 12.

a. How many people died from floods in Vietnam?

b. How many people were killed in central Nigeria by troops?

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- **India softened** terms for resuming peace talks with Pakistan, demanding only "meaningful reduction in cross-border terrorism" in Kashmir.
- **More than 350 migrants,** most of them Iraqis, drowned when their overloaded boat sank off the south coast of the Indonesian island of Java.
- **The American** and two Russians who are living on the international space station until December welcomed their first guests on Tuesday: a Russian Soyuz capsule arrived carrying two cosmonauts and a French researcher. It docked two days after lifting off from Kazakhstan.
- **A Japanese** freelance photographer, Isamu Iida, has been arrested for illegally entering Afghanistan. The Taliban are still holding French journalist Michel Peyrard.
- **Hours after United States** President Bush left the Apec summit in Shanghai, China put on trial an American engineer, Fong Fuming, for allegedly obtaining secret state documents and bribery. There was no verdict in the trial, which the court declared over after a seven-hour session.
- **The United Nations** has warned of a severe food shortage in Somalia after seasonal rains failed to materialize.
- **The UN peacekeeping** mission in Eritrea and Ethiopia wants both countries to identify and bury the corpses of more than 300 soldiers left to rot on battlegrounds since the two countries' 30-month conflict ended last December.
- **Flash floods** triggered by heavy rains and whirlwinds killed at least 10 people in central Vietnam, pushing the death toll from recent flooding to 315, including at least 241 children.
- **Digna Ochoa,** a Mexican human rights lawyer who defended poor people accused of being guerrillas, has been shot dead with a warning that others may meet the same fate.

c. How long was Fong Fuming's trial?

d. How many corpses were left to rot in Eritrea and Ethiopia?

e. How long did the conflict between the countries mentioned in the previous question last?

f. Why did the boat carrying mainly Iraqis sink?

g. What nationality was the human rights lawyer who was shot dead?

h. What have Somalians been warned about?

i. Where did the Russian space capsule take off from?

j. Who is India wanting to hold peace talks with?

3 Recognising main ideas

One of the main skills that good readers develop is the ability to recognize the main ideas in what they read.

3.1 Some writers use **signpost** words, which make it easier for the reader. Examples of these are:

- Sometimes we are told: *The main point …; There are two major reasons …;*
- *But* and *however* often indicate important contrasts;
- Asking a question can indicate a main point: *Why is …?*
- A writer may repeat an important idea: *In other words …*
- Conclusions are usually important and can be indicated by: *therefore; in conclusion, we can conclude; the result.*

3.2 But not all writers signpost their writing. Then you have to use the ideas and words in the text, and the knowledge that you have of the world to decide which are the main points in the text.

3.3 The structure of a text may also help you to identify the main points. We can expect an introduction to a topic in the first paragraph, and a conclusion to it in the last paragraph. Usually each new paragraph introduces a new idea. Knowing this can help you to find the main ideas.

Exercise 5

1 Take any newspaper or magazine article that interests you. Read it, trying to decide what the main ideas are. Remember to use *signposting*, your own *knowledge* of the topic, and the *structure* of the article to help you.

2 Do the same with a section from a text book that you are busy studying. Make notes of the main points to help you to revise the section later.

4 Following logic

4.1 Seeing coherence

Coherence is the term used to talk about the way in which a text is linked, in which ideas and facts are connected. A good writer writes a coherent piece of work. Seeing how this works, and following the connections is a skill that good readers develop.

Below is a table giving you the kind of idea used and the linking words or signpost expressions that usually mark it:

Reason	because, since
Contrast	whereas, but
Conclusion	consequently, as a result
Rephrasing	i.e., in other words
Example	for example, for instance
Addition	furthermore, in addition

When you are trying to follow the logic and coherence in a text, trying to make sense of it, look out for these linking phrases, and what they signify.

Exercise 6

Read the following passage. Linking words have been left out. Choose words from those given below to fill in these gaps. Make sure that the passage is coherent.

the consequences of because in addition as a result in other words

Aids deaths occur mostly in the 20 to 40 year old age group. This age group forms the generation that is bringing up young families. … the Aids related deaths are growing, many young children are being left parentless. … they suffer economically, because there is no breadwinner, … , they are unable to feed themselves or to afford to pay school fees. … abandoning this generation of orphans are going to be very negative for life in South Africa. The worst scenario is that of a generation of undisciplined, uneducated youths forced into crime and drugs to survive, unable to contribute in any way to the economy of the country, and in turn unable to bring up a next generation of children capable of a better life. … they are likely to be the casualties of the growing Aids scourge.

4.2 Pronoun reference

What sometimes confuses you and prevents you making sense of something you read is the writer's use of pronouns.

Pronouns do not only refer to nouns:

> **Peter** read **the book**. **He** enjoyed **it**.

Pronouns can also refer to phrases and whole ideas:

> **The fact that crime is on the increase** in South Africa is largely responsible for the loss of tourism. **This** also explains the loss of income.
>
> If you do not understand that **This** refers to **The fact that crime is on the increase,** it is not possible to understand *what it is* that explains the loss of income.

In your reading, you should be alert to pronouns and what has gone before that they could possibly refer to.

Exercise 7

In the following text, the pronouns have been underlined. In each case indicate what they refer to.

One of the main problems in the fight against Aids is the appalling stigma and resulting silence that is found, particularly in rural areas. This means that the problem is not discussed or acknowledged. It means that Aids workers do not have access to those people who are ill with the disease. They simply do not come forward for treatment through fear of being cast out of their homes and families. In addition, educating as a means of preventing the spread of the disease becomes increasingly difficult in such a climate. And even if it were possible, most rural women would find it difficult to insist on safety precautions for cultural reasons. They do not have the power to insist that their men condomize.

4.3 Ellipsis

Ellipsis means leaving out words to avoid repetition and clumsiness. When a writer does this, he assumes the reader will be able to understand. You should be able to understand the second sentence below even when the underlined words in italics are missing:

1 It is important to focus and take these exercises seriously in order to improve your English. If you do not *focus and take these exercises seriously,* you may be wasting your time

2 It is important to focus and take these exercises seriously in order to improve your English. If you do not, you may be wasting your time.

A skilled reader is aware of which words or phrases have been left out.

Exercise 8

Read straight through the following paragraph, trying to grasp its meaning. Then decide what words are missing between the brackets.

If you want to become a better reader, it is important to spend time reading. If you do not ( ) it is unlikely that much improvement will happen. Doing these exercises is a good start, but ( ) definitely not enough. Both ( ) are necessary. Reading for pleasure is a vital part of learning the structure of a new language, ( ) a vital part of learning to read better, ( ) to write better.

5 Dealing with unfamiliar words

In the vocabulary section earlier in this study material, you looked at dealing with unfamiliar words. A skilled reader may well come across words that he or she has never seen before, but will not stop to look them up in the dictionary, and will rather try to make sense of the whole. Stopping in the middle of your reading can make you lose focus and prevent you following the meaning of the whole passage or text. If a word is really important to your understanding, you do need to know what it means. If you can't work it out from its stem or from the context,

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you may have to look it up in a dictionary. When you start reading again, take time to remind yourself where you were in the text.

Exercise 9

Read through the whole of the following paragraph, and then attempt to work out what the underlined words in *italics* mean without looking them up in a dictionary.

A major *illusion* that students have, is that learning results from teaching. The truth is that learning results from *cognitive* effort on the part of individual students. Their *inclination* to sit back in the *expectation* of being filled with knowledge while listening to the lecturer is an *error* often only realized when exam time arrives. It is high time that learners realized that *passivity* will get them nowhere. Only active participation *yields* results.

6 Understanding viewpoint

It is important for you as a reader to be able to see what the writer's point of view is. She may, for example, write an article in support of abortion. Another writer may write an article mentioning the religious viewpoint which is against abortion. When you read these two articles, you should be able to compare the different viewpoints on abortion.

It is also important that when you read, you accept that what you are reading may be a point of view and not necessarily fact. You can agree or disagree with it.

Sometimes a writer offers a point of view with which he or she does not agree. Then it becomes important that you see how the writer distances him- or herself from that viewpoint.

Exercise 10

Determine the point of view of the writer in the following three passages.

1 *A bizarre speech by President Mbeki at Fort Hare University has been construed as evidence that he is an Aids dissident. A Wits lawyer says that Mbeki's stand on Aids was a tragedy of momentous proportions. This stand rests on three pillars: that HIV is a harmless organism that causes no illness; that Aids, if it exists at all, is caused by factors unrelated to HIV; and that drugs supposed to treat Aids do more harm than good.*

(adapted from *Mbeki in bizarre Aids outburst* in *The Mail and Guardian* Oct 26 to Nov 1 2001)

2 *As many teachers die every year of HIV/Aids as qualify to teach; school districts exhaust their annual budgets on transporting deceased teachers to their homes; many schools are closing because HIV/Aids has stripped them of their teachers. These nightmare scenarios afflict many African countries and South Africa could be heading the same way. At the same time that this has been happening, there has been an incredible decrease in the number of students in teacher education programmes. These are alarming trends, which could well lead to a crisis in education. Something urgent needs to be done.*

(adapted from *'We can't afford silence'* in *The Mail and Guardian* Oct 26 to Nov 1 2001)

3 Aids is a disease sent by God to punish the wicked. Until man finds the moral path again, he will continue to die. Why do you think no 'cure' has been found? There is none. God is greater than any doctor or scientist. The only cure is a return to godliness, self respect and morality. Just as in the past God sent a flood and the plague to wipe out evil, so he has sent Aids to rid the world of the unclean.

The best way to become a good reader is to read as much as you can. Don't read only newspapers, magazines and study materials. Also read novels for pleasure. Find out what kind of story interests you, and make time to read for pleasure every day. Your reading skills will improve with seemingly no effort on your part. ENJOY READING.

Reading Skills: Answers

Exercise 1

Judging by the contents page, this would be a good book to use. It has entries dealing with aspects of what to eat and drink while training for a competition.

Exercise 2

1 The problem seems to be the high rate of infection with HIV/Aids found at universities. Students make up the most talented members of society but they are at the age of highest risk. Previous attempts to educate and change behaviour have failed.

2 A study that was done indicates that 22% of students are already infected and many more infections may occur, so that the authorities, shocked by these statistics, have obtained funds from a donor to try and turn things around. A programme is being introduced to combat the spread of Aids, and the Dept of Education will also participate.

3 Obstacles include the culture of silence and denial, not enough resources and an inability to deal with the problem, restricting planning too narrowly on prevention, and no planning by universities to deal with the impact HIV/Aids will have on education.

Exercise 3

1 You will have to turn to **V** in the directory, then to **VAN**, then to **VAN DER**, and then find the initials and look down until you come to **G.** Different telephone directories may have different names before and after Van der Merwe. An example of *before* is **VAN DER MEIJDEN** and of *after* is **VAN DER MESCHT**.

2 (a) The heading you are looking for can be found at **3.3** on page **63**.

(b) The sections most useful for general diet are **1.1 - 1.6, 2.1 - 2.7, 3.7, 6.2 - 6.3**.

(c) The sections to read for what you need to eat and drink during a long-distance event are **4.6** and **4.7**.

(d) The sections you would read to find out what to do about recovering after a big race are **5.1 - 5.3**.

Exercise 4

In order to find these answers, you had to look for keywords. In the case of the first five answers, you were looking for a number, linked to other keywords. You ran your eye down the 10 little paragraphs until you spotted what you were looking for.

a. 315
b. 200
c. 7 hours
d. more than 300
e 30 months
f. It was overloaded
g. Mexican
h. A severe food shortage
i. Kazakhstan
j. Pakistan

Exercise 5

No set answers.

Exercise 6

Aids deaths occur mostly in the 20 to 40 year old age group. This age group forms the generation that is bringing up young families. ***Because*** the Aids related deaths are growing, many young children are being left parentless. ***As a result*** they suffer economically, ***in other words***, because there is no breadwinner, they are unable to feed themselves or to afford to pay school fees. ***The consequences of*** abandoning this generation of orphans are going to be very negative for life in South Africa. The worst scenario is that of a generation of undisciplined, uneducated youths forced into crime and drugs to survive, unable to contribute in any way to the economy of the country, and in turn unable to bring up a next generation of children capable of a better life. ***In addition***, they are likely to be the casualties of the growing Aids scourge.

Exercise 7

This – **the appalling stigma and resulting silence**
It – **the appalling stigma and resulting silence**
They – **those people who are ill with the disease**
it – **educating**
They – **most rural women**
their – **the rural women's**

Exercise 8

If you want to become a better reader, it is important to spend time reading. If you do not ***spend time reading***, it is unlikely that much improvement will happen. Doing these exercises is a start ***at becoming a better reader***, but it is definitely not enough. Both ***reading and doing the exercises*** are necessary. Reading for pleasure is a vital part of learning the structure of a new language, ***reading for pleasure is*** a vital part of learning to read better, ***reading for pleasure is a vital part of learning*** to write better.

Exercise 9

illusion – **false idea**
cognitive – **to do with the brain, with thinking**
inclination – **what the students want to do**
expectation – **hope**
error – **mistake**
passivity – **the state of doing nothing active**
yields – **brings or gives**

Exercise 10

1 The writer distances himself from the point of view of the Wits lawyer by using the phrase 'has been construed' which lets the reader understand that it is not his own opinion, but that of the Wits lawyer. The writer also distances himself from Mbeki's view by calling it a 'stand'. The only clue we have that the writer perhaps agrees with the lawyer is his use of the word 'bizarre' to describe the President's speech.

2 This appears to be the writer's own opinion. He calls it 'nightmare scenario' which shows the reader that he is appalled by it. He calls the decrease in student teachers 'incredible', meaning that he finds it hard to believe, and speaks of the trends as 'alarming' which shows that he is afraid for education. He confirms this by ending with a call to do something to solve the problem.

3 There is no fact or factual evidence in this paragraph. It is the opinion of the writer. You can argue against it or agree with it. It will depend on your point of view.

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LIFE SCIENCES GRADE 11 LESSON NOTES

ENVIRONMENTAL STUDIES
Sustaining our Environment

1. Introduction

Humans influence the environment and use the natural resources, often resulting in destruction of the environment. We need to find solutions to stop planet destruction and sustain the environment and maintain the carrying capacity of the planet. If we do not, food, water and habitats will be destroyed. In order to survive, we must conserve natural resources by using resources economically and prevent wasting what we have. Added to this, we must look to replenishing resources that have been damaged and destroyed or we will impact on the natural distribution of biotic and abiotic factors.

2. Socio-economic environment

- Social Development: ensure that the population has food, health care, clean water, proper sanitation and electricity
- Economic development and growth: food production and export – strong economy and proving jobs and ensure ecological balance – replacing lost resources
- Environmental development and protection: protect natural fauna and flora; manage soil, air and water resources properly; reduce pollution and rehabilitate the environment where necessary

3. Soil rehabilitation

Soil fertility must be maintained. Soil management systems increase plant growth so food production can be increased to meet population growth. The following can be implemented:

Forestation

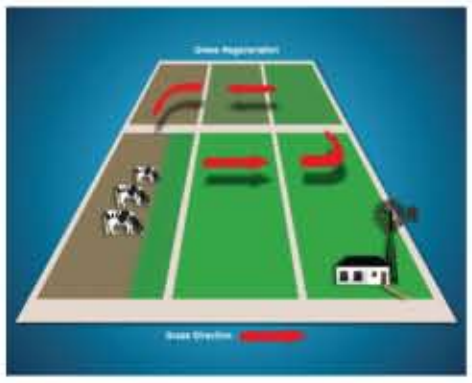
- Relocate animals which will prevent ecosystem imbalances and extinction
- Recycle paper
- Plant new trees in other areas

Farming

- Good farming practices like crop rotation, organic manure, strip farming, fallowing and contour farming are needed to ensure soil fertility and increase crop yields.
  - Crop rotation - different crops are planted in the same field each season of the year. Each crop takes different nutrients from the soil and replaces other needed minerals, e.g.: leguminous plants like beans and peas increase nitrogen levels in the soil.
  - Strip farming involves growing crops in strips in one field. The crops are planted diagonal to the direction of the wind and water run-off. This ensures that soil is blown from one strip but caught by the plants in the next strip preventing soil erosion. The soil washed from one strip ends up in the next.
  - Fallowing – a field is not planted for at least one year to allow time to replace minerals in the soil.
  - Contour farming prevents soil erosion because crops are planted across slopes in rows or strips. Each strip stops the water from flowing away and washing soil with it.
  - Monocultures provide much food in one crop. This has problems like pest, insect and plant parasite populations which will invade an entire crop and destroy it. Pesticides and fungicides must be used carefully to prevent infestation. Natural enemy species can be used instead of pesticides and are far more environmentally friendly. Natural enemies destroy the pests and do not disturb the natural food chains.
  - Natural manure and humus should be used to replace lost nutrients. It is natural and inexpensive. Inorganic fertilizers leach nitrates which causes other environmental problems so it is far better to use natural, organic fertilizers.

Soil Erosion

- Plants and trees stabilize the soil – the roots hold the soil in place
- Prevent overgrazing
- Use humus and manure to improve fertility
- Terraces cut into steep slopes to reduce water run-off and silting of rivers



Use humus and manure to improve growth

Mining

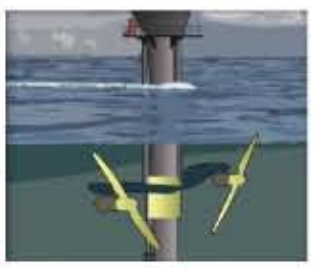
- Fossil fuels like coal, oil and natural gas are mined from the soil to provide energy.
- Fossilization takes many years and resources are being depleted.
- We must find ways to reduce the rate at which we are using our natural resources, e.g.: hydro-electricity, wind power, nuclear power, wave/tidal power, solar power

Hydro-electricity

Nuclear plant

Solar power

Wind power



Tidal power

Plastics

- Plastic is non-biodegradable.
- They can be collected and recycled
- Plastic bottles can be washed and reused

Chemical Wastes

- Wastes can be treated to reduce toxicity before dumping
- Ensure that containers are leak-proof
- Dump at regulated dumping sites only
- Maximum fines must be given when regulations are broken
- Culprits must be held accountable for illegal dumping. They must clean up their illegal dumping sites and legal action must be taken against them

4. Water rehabilitation

Industrial Wastes

- Industry is very important to economic growth, but industrial sites produce many waste products.
- Cooling systems must be put into waste water outlets to prevent thermal pollution
- Filtering units must be fitted to outlets to purify waste water before it is released into rivers and streams
- Harmful chemicals like cyanides, lead, copper, mercury and zinc must be removed chemically before water is pumped into natural outlets.

Sewage

- Sewage must be treated before it is released. Treated sewage makes very good organic fertilizer
- Treated sewage reduces the spread of diseases like cholera, typhoid and poliomyelitis
- Untreated sewage causes abnormal algae growth which removes much needed oxygen from the water, resulting in the death of aquatic plant and animal life.

Sewage treatment plant

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Learning Channel SABC1 broadcast 10am-12pm Monday to Friday
and 6am-7am Saturday and Sunday

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LIFE SCIENCES GRADE 11 LESSON NOTES

Agricultural wastes

- Prevent the use of artificial insecticides, fungicides and fertilizers and reduce leaching of these substances into the water table
- Introduce natural enemies to control pests and insects
- Make natural fungicides by using non-harmful substances like tobacco leaves, dishwasher and garlic.

Oil Spills

- Oil spills can be prevented by the proper maintenance of oil tankers and regular inspections
- Oil holds must be flushing out at harbours where enzymes can be used to reduce the oil mass

Oil tanker

5. Air rehabilitation

Factory emission

- Extractors and stacks must be fitted with air filters to remove carbon dioxide, sulphur dioxide, nitrogen oxide, soot from the air before it is pumped into the atmosphere
- Emissions must be checked regularly to ensure that they are within Government regulation limits.
- Levy maximum fines on transgressors
- Desulphurization to remove sulphur dioxide to prevent formation of acid rain

Carbon Monoxide emissions

- Car engines must be properly tuned to minimize emissions
- Design and use of electrical and solar engines to replace petrol engines

Conservation of Animal and Plant Life

- Game reserves conserve animal and plant species
- Government legislation is in place to restrict hunting and fishing
- Restrictions are based on breeding seasons, size and numbers.
- Permits are purchased by fishermen and hunters. Should fishing or hunting occur out of season or outside the regulations, then fines are levied.
- Proper law enforcement and high penalties for transgressors will ensure that people work within the laws and regulations which will protect the fauna and flora.

6. Waste management

Advantages of Recycling

- Reduces amount of waste that must be removed and destroyed
- Resources can be reused
- Recycling results in energy saving as reused objects do not have to be produced from scratch
- Pollution is reduced

Glass and paper collection domes

Waste Separation

Use separate waste containers for organic waste, glass, plastic and tins in homes. This process requires much discipline and also the collection process must be improved, although this can be expensive.

Waste Incineration

Burn wastes and use energy to power generators to produce electricity which can be used in households. This will reduce the demand on fossil fuels.

Methane production

The organic waste in land fills produces large amounts of methane gas which is highly flammable. Recovery systems can be constructed to collect the methane gas which can then be used to generate electricity and reduce air pollution.

Activities

Activity 1 – Population growth forms

LO1 : AS 3; LO2 : AS 1,2,3

A farmer has an enclosure of 5 km² in which he has kept some springbok since 1970. Predators are kept out of this area, but organized hunting was allowed on two occasions. The number of buck at the end of the year is shown in the table below.

YEAR	No. of buck
1970	10
1975	127
1980	160
1985	153
1990	150

1. Draw a graph to show the changes in population size since 1970.
2. Determine the number of buck population in the year 1983.
3. Explain the reason/s for the decrease in the population of the buck in 1985 and 1990.
4. Give one reason for the high increase of buck in 1975.
5. During which years did hunting take place?

Activity 2: Effects of abiotic factor on biotic organisms.

LO 1 : AS 1,2,3; LO 2: AS 1,2,3; LO 3: AS 2,3

Write an essay discussing the effects of abiotic factors on plants and animals. In your essay discuss the following abiotic factors: soil, water, humidity, temperature and light.

Summative Assessment – Diversity, change and continuity

1. Study the mid-year statistics of the AIDS death rate on an island.

YEAR	Number of Deaths
1982	84
1983	92
1984	105
1985	134
1986	195

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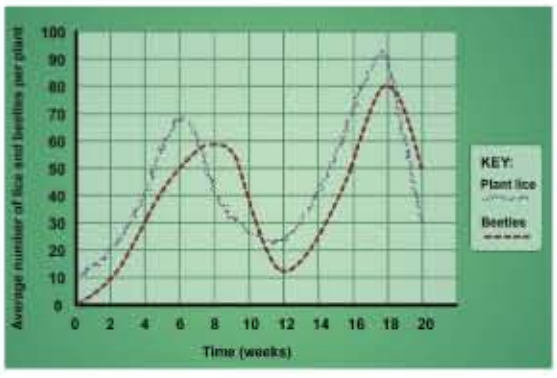
LIFE SCIENCES GRADE 11 LESSON NOTES

1987	204
1988	211
1989	230

a. In which year was the death rate the highest? (1)
b. In which year was the death rate the lowest? (1)
c. What do you understand by the word mortality? (1)
d. State the type of counting method most commonly used to determine the size of the population. (1)
e. Draw a line graph for the information provided in the table. (5)
f. Name the type of growth curve represented by the graph. (1)

2. The owner of a nursery has a large number of plants in his garden. He suddenly experienced trouble with pant lice on his plants and decided to try and control this pest with the aid of ladybird beetles instead of insecticides. The results are given in the graph below.



a. Use the graph to determine which animal is a predator and which is a prey. (2)
b. Give a reason for your choice in 'a' above. (2)
c. What was the maximum number of plant lice per plant during the period of the investigation? (1)
d. After approximately six weeks the number of plant lice started decreasing. Give ONE possible reason for the decrease. (2)
e. Give ONE possible reason why the number of plant lice started increasing again after about 12 weeks (2)

3. a. Name TWO growth form curves. (2)
b. State ONE difference between the two curves mentioned in 'a'. (2)
4. Define the term 'population'. (3)
5. In an attempt to estimate the number of fish in a dam, 600 fish were caught, marked and released. One week later 800 fish were caught and of these 100 had been marked. Determine the possible number of fish in the dam. Show ALL the calculations. (5)
6. Differentiate between the following pairs of terms:
a. Intraspecific competition and inter-specific competition. (2)
b. Density-dependent factors and density-independent factors. (2)

TOTAL [35]

Activity 2: Rubric – Writing Skills Performance Levels

CRITERIA					
	0	1	2	3	Comments
Ability to select scientific facts & concepts relevant to topic	Not relevant to topic	Some parts relevant	Most parts relevant	All parts relevant	
Ability to use correct grammar & spelling	Many grammatical and spelling errors	Few grammatical and spelling errors	No grammatical or spelling errors		
Ability to organize new ideas into paragraphs	No paragraphs	2 paragraphs	3 or more paragraphs, including an introduction & conclusion		
Ability to link concepts and facts to form a coherent essay	Unable to link concepts, essay recorded as arbitrary sentences with no association; disorganized & lacks focus	Attempt made to link concepts; lacking in detail; some loss of focus	Good essay; analysis is vague at places without the eloquence and style of the excellent category	Excellent essay; critical concept analysis linked clearly; flow from one idea to the next	
TOTAL: 10					

Memorandum (Diversity, change and continuity)

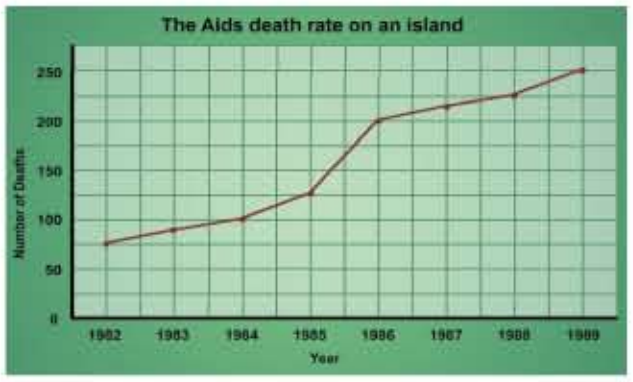
1. a. 1989 ✓ (1)
b. 1982 ✓ (1)
c. Mortality is the death rate of a population ✓ (1)
d. census ✓ (1)

Answers and assessment

Activity 1: Rubric – Graph

CRITERIA	Performance Levels			
	0	1	2	Comments
Correct type of graph	Incorrect type	Correct type		
Heading	Not present	Incomplete	Complete	
Labeling both axes	No labels	Only one axis	Both axes	
Plotting points	Incorrect	Some correct	All correct	
Neatness	Untidy	Tidy		
Analyzing graph	Not analyzed	Incorrectly analyzed	Correctly analyzed	
Total: 10				

e.



(5)
f. Logistic growth curve ✓ (1)

2. a. Predator – beetles ✓
prey – plant lice ✓ (2)
b. More ✓ prey is present in the start ✓ of the graph (2)
c. Between 90 – 93 ✓ (1)
d. Predation has occurred ✓✓ (2)
e. Beetle population has decreased ✓✓ (2)
3. a. Logistic growth curve ✓ and geometric growth curve ✓ (2)
b. Logistic – s-shape curve ✓
Geometric – j-shape curve ✓ (2)
4. Population – a group of organisms of the same species ✓ occupying and living in a certain defined area ✓ where interbreeding ✓ can occur. (3)
5. $N = C \times \frac{M}{R}$ ✓
$= 800$ ✓ $\times \frac{600}{100}$ ✓
$= 4800$ fish ✓ (5)
6. a. Intraspecific – competition between the same species ✓
Interspecific – competition between different species ✓ (2)
b. Density-dependent – deaths caused due to the number of organisms ✓
Density – independent – deaths caused due to natural disasters e.g. floods ✓ (2)

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ECONOMICS GRADE 10 LESSON NOTES, TASKS AND SOLUTIONS

Economics concepts and production possibilities

Notes

The following topics will be dealt with in this lesson:

- The Economic Problem
- Opportunity Cost
- Production Possibility Frontiers

1. The Economic Problem

- What goods and services should an economy produce?
- How should goods and services be produced?
- Who should get the goods and services produced?

Economic problem reveals that:

- People have **unlimited Wants.** You want a TV set today, tomorrow a car.
- Scarce Resources – Land, Labour, Capital. The means or recourses to produce your needs and wants are scarce.
- Resource Use – scarce resources have alternative use. With your pocket money (scarce resource) you can choose to save it or spend it on sweets.
- Choices – the process of choosing between two alternatives. Choosing between saving and spending involves a very special cost, i.e. opportunity cost.

2. Opportunity Cost

- Definition – the cost expressed in terms of the next best alternative sacrificed. It is the real cost of choosing one thing not another.
- Helps us view the true cost of decision making
- Implies valuing different choices

3. Production Possibility Frontiers (PPF)

- Show the different combinations of goods and services that can be produced with a given amount of resources
- No 'ideal' point on the curve
- Any point inside the curve – suggests resources are not being utilised efficiently
- Any point outside the curve – not attainable with the current level of resources
- Useful to demonstrate economic growth and opportunity cost

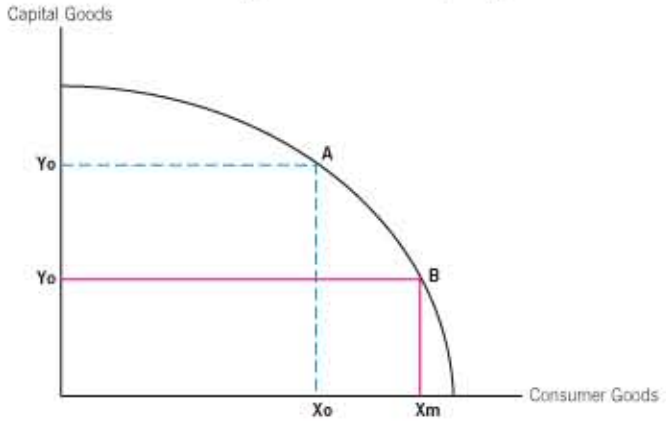
Illustration of Production Possibility by means of a Curve (PPF)

Option 1. The country uses all of its resources

Assume a country can produce two types of goods with its resources – capital goods and consumer goods.

If it devotes all resources to capital goods it could produce a maximum of Ym. If it devotes all its resources to consumer goods it could produce a maximum of Xm. If the country is at point A on the PPF It can produce the combination of Yo capital goods and Xo consumer goods.

If it reallocates its resources (moving round the PPF from A to B) it can produce more consumer goods but only at the expense of fewer capital goods. The opportunity cost of producing an extra Xo – X1 consumer goods is Yo – Y1 capital goods.

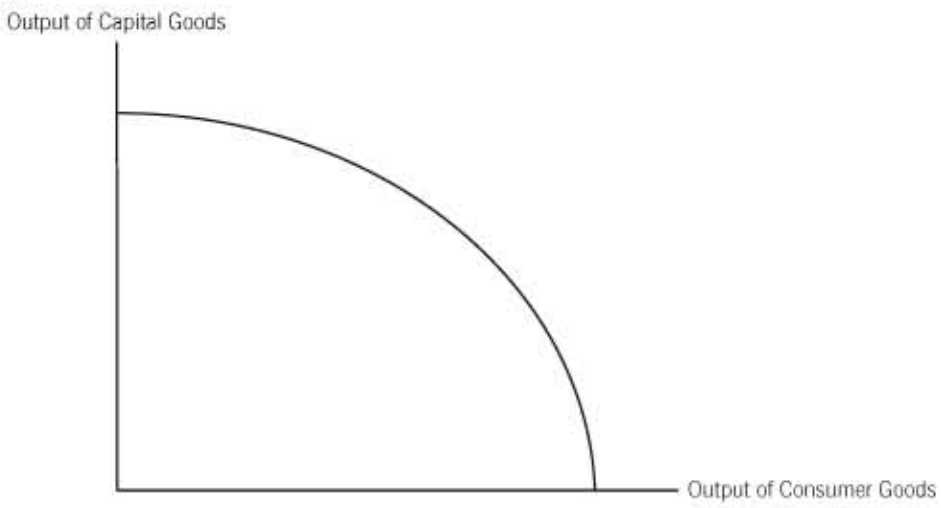


NB. The country may have different options. Another option is that the country may not use all of its resources.

TASK

Choose the correct answer for each question.

1. Which of the following is a positive economic statement?
   A. Direct taxes should be increased to distribute income more fairly
   B. The distribution of income and wealth is unequal
   C. The government ought to cut the taxes paid by motorists
   D. All taxes are bad, but some public services are good
2. Profit is most likely to be an economic objective of
   A. Governments
   B. entrepreneurs
   C Consumers
   D. Labour
3.



3.1 Which economic concept is illustrated by the shape of the production possibility frontier shown in the diagram above?
   A. The theory of demand
   B. Economic growth
   C. The law of diminishing marginal returns
   D. The law of economies of scale

3.2 The opportunity cost to society of constructing a new motorway would be
   A. The financial cost of the road
   B. The other goods and services that would be produced if the motorway were not built
   C. The other goods and services which labour employed constructing the road could produce
   D. The loss of farmland and natural habitat used in order to build the road

3.3 Which one of the following is an example of a 'normative economic statement'?
   A. Prices in a competitive market are likely to be lower than under a pure monopoly
   B. Increased consumer spending on new cars will lead to a rise in traffic congestion
   C. Most firms seek to maximise their market share
   D. The government should increase the taxation on goods which harm the environment

3.4 Which one of the following is a normative economic statement?
   A. Building a new hospital involves an opportunity cost
   B. Some medicinal drugs are ineffective
   C. The government should spend more on the health service
   D. The government regards health care as a merit good

3.5 Which one of the following is best described as a normative statement?
   A. Extra funding for the NHS may involve some switching of spending from other services
   B. A reduction in spending on the NHS will result in some job losses
   C. Free health care should be provided to everyone free at the point of consumption and not based on ability to pay
   D. A reduction in health care spending will have most impact on lower income households

3.6 Which one of the following is a positive economic statement?
   A. The extent of income inequality in the South Africa has increased over the last 30 years

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ECONOMICS GRADE 10 LESSON NOTES, TASKS AND SOLUTIONS

B. The national minimum wage rate should be increased to R5 per hour for all workers

C. Nurses working the national health service should be on a maximum working week of 50 hours per week

D. The rate of unemployment is too high

3.7 In a market-based economy the scarcity of factors of production means that

A. The economy cannot produce on its production possibility frontier

B. The economy cannot achieve economic growth every year

C. Inflation is inevitable

D. Consumers must inevitably consider the opportunity cost of their choices

3.8 Which of the following is a measure of productivity?

A. The amount produced

B. The percentage increase in employment

C. Output divided by employment

D. The quantity of capital employed

4. Study the information given below and draw up a **Production Possibilities Curve** to illustrate how an economy makes decisions on what to produce, or spend their money on, i.e. show the choices a country can make with respect to its available **resources**.

An economy for the country shows that they can produce two goods apples and shoes, we can get a better idea of what choices they have for production. When the resources of a country are used to their **full potential** we can produce 100 million apples a year or we can produce 4 million pairs of shoes, but they cannot produce all of both. NB. All resources are used.

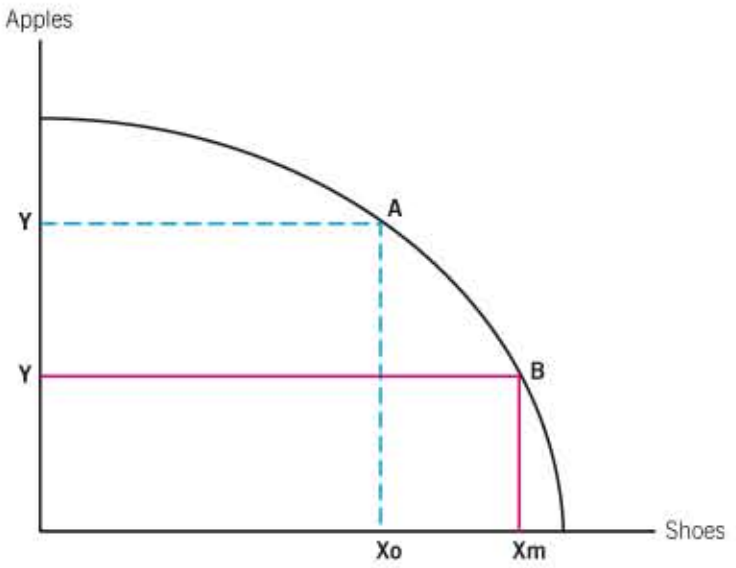
SOLUTION

1. B 2. B

3.1C 3.2B 3.3D 3.4C

3.5C 3.6A 3.7D 3.8C

4.



The line that connects points A and B is called a production possibilities frontier (PPF). It represents all of the possible combinations of production possibilities available to the country. If the economy decides that it needs apples and shoes it can choose to produce at any point along the production possibilities curve. If they choose to produce at point C they are making a combination of let's say shoes 3.5 million shoes and 50 million apples. With that in mind, what is the opportunity cost of producing 3.5 million shoes? What did we give up to produce the shoes? We gave up 50 million apples. Opportunity cost is always expressed in terms of what we gave up in order to get something else. In this case we gave up 50 million apples so we could move some resources in to the production of shoes.

TASK

A:

1. Which ONE of the following would lead *directly* to an outward shift in a country's production possibility frontier?

A. A rise in the population of working age.

B. A fall in unemployment.

C. An increase in outward migration.

D. A rise in the school leaving age.

2. The cost of one good or service measured in terms of what must be sacrificed to obtain it is called

A. real cost.

B. potential cost.

C. opportunity cost.

D. social cost.

3. All of the following are essential features of a market economy EXCEPT which ONE?

A. Private ownership of productive resources.

B. Allocation of resources by the price mechanism.

C. Absence of entry and exit barriers to and from industries.

D. Prices determined by market forces

4. Whenever government intervention prevents prices from reaching their equilibrium level, the result will always include ALL of the following EXCEPT which ONE?

A Shortages or surpluses.

B. Demand and supply not equal.

C. Reduced profits for producers.

D. Resources not allocated by price.

5. Which ONE of the following is a natural barrier to the entry of new firms into an industry?

A. Large initial capital costs.

B. The issuing of patents.

C. A government awarded franchise.

D. The licensing of professions.

6. A good which is characterised by both rivalry and excludability is called

A. a public good.

B. a private good.

C. a government good.

D. an external good.

7. The recession phase of the business cycle will normally be accompanied by all of the following EXCEPT which ONE?

A. A rise in the rate of inflation.

B. A fall in the level of national output.

C. An improvement in the trade balance.

D. A rise in the level of unemployment.

8. According to the new classical school, in order to manage the economy, governments should

A. use active fiscal and monetary policy.

B. adopt a laissez faire approach and leave everything to market forces.

C. announce monetary rules to control inflation, and liberalise product and factor markets.

D. use only monetary policy to increase output and employment.

9. All of the following will normally lead to a fall in the level of economic activity in an economy EXCEPT which ONE?

A. A rise in cyclical unemployment.

B. A fall in business investment.

C. A decrease in government expenditure.

D. A rise in interest rates.

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ECONOMICS GRADE 10 LESSON NOTES, TASKS AND SOLUTIONS

B

1. **(TO DE DONE IN CLASS)** Given below are some data on total revenue and total cost for a firm

Output per week	TR per week	TC per week	Profit per week	MR	MC
0	0	0			
1	50	10			
2	90	25			
3	125	45			
4	155	70			
5	180	100			
6	200	140			
7	210	200			

a) Complete the table

b) What is the output level that maximises profit

c) Assume the government levies a fixed, 'lump-sum' tax on this firm's profit of R40. How will this affect the firm's profit-maximising choice of output level?

d) Assume instead the government imposes a tax of R6 per unit on this firm's output, i.e. for each unit sold the firm must pay R6 tax to the government. How will this affect the firm's profit-maximising choice of output level?

SOLUTION

A

1 **A** 2 **C** 3 **C** 4 **C** 5 **A**

6 **B** 7 **A** 8 **C** 9 **A**

B

Output per week	TR per week	TC per week	Profit per week	MR	MC
0	0	0	0		
1	50	10	40	50	10
2	90	25	65	40	15
3	125	45	80	35	20
4	**155**	**70**	**85**	**30**	**25**
5	180	100	80	25	30
6	200	140	60	20	40
7	210	200	10	10	60

a) See table above

b) 4 units per week

c) The lump-sum tax has no effect on the profit-maximizing output choice as it is essentially just a fixed cost (or a sunk expenditure)

d) The unit tax increases marginal cost by R6 for every unit sold. Thus the fourth unit is no longer profitable (MR (30) < MC (31). To maximize profit the firm should produce 3 units per week

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BUSINESS STUDIES GRADE 10 LESSON NOTES

BUSINESS PLAN

Case Study

Techtical.com - Financial planning

Moloko is a software engineer with a major multinational firm and a highly experienced programmer. He is also a keen racing sailor, and for many years in his spare time he has been developing a piece of software to help racing sailors plan their tactics for a race. The software enables you to input a wide range of variables, including the weather, the tide, and the nature of the course, the boat characteristics and information about the competition. From this you can then develop a strategy for the race. After the race you can input your decisions and test them against what the software considered the optimum strategy. Moloko has used it widely and found it very effective and he has also given copies of it to sailing friends for them to test. They have frequently commented that he should sell it, and he has finally decided to leave his job and set up a company to sell and market the product.

He has decided that the most effective way to distribute it would be through the internet and so he is planning to set up a sales and promotion web site called techtical.com. The software itself will be available through a CD. To make the software more marketable he will need to employ some other programmers and designers.

He is planning to work from home initially and he estimates his initial set-up costs to be as follows:

Software costs - R4, 000.00

E-commerce set-up and hosting - R1, 250.00

Design costs - R950.00

He has allocated R3, 600 for his marketing budget, though he has not yet decided the most appropriate marketing methods to use.

He has investigated carefully to see what other similar products are available and believes he has found a niche in the market, though there are some other sailing simulation packages, but these are mostly game-style ones and not targeted at serious sailors.

He feels that this is a premium product targeted at a small niche and so he is able to set a relatively high price. He has discussed this with sailing friends and it is clear that price is not very important in their decision about whether to buy the product. He is planning therefore to charge R65 for each CD produced.

He expects the variable costs of each unit to be:

R2.50 per CD produced

R5.25 for each manual produced

R2.25 postage/distribution cost

He will be starting to sell the product at the start of March 2008 and expects sales for the first year to be:

	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Sales	15	20	25	45	40	35	25	10	10	45	15	25

He is going to approach the bank to try to raise R10,000.00 start-up funding, but needs some help developing his business plan.

Task

1. What is the break-even level of output for techtical.com?
2. Which of the following changes would reduce the level of break-even output for techtical.com?
   a. Moloko decides to reduce the price of the software
   b. The software and design costs are higher than expected
   c. Moloko decides to allow people to download the software from the web site making the distribution costs lower
   d. The cost of printing the manuals increases because of an increase in paper prices
3. Which of the following changes would increase the level of break-even output for techtical.com?
   a. Advertising rates in yachting magazines are increased because of heavy demand
   b. A promising level of sales encourages Moloko to increase the price of the software
   c. CD pressing costs fall because of a surplus in the market
   d. Moloko finds that the credit card charges for purchases from the web site are lower than he expected
4. Which of the following might be considered a closed form of promotion?
   a. Advertising in yachting magazines
   b. Direct mailing to a database of yachting people Moloko has bought
   c. Buying slots on local radio stations at coastal locations
   d. Advertising in a trade journal for yachting businesses
5. Which of the following might be considered an open form of promotion?
   a. The development of a logo and brand image to help promote the product.
   b. Exhibiting at boat shows and other trade events.
   c. Advertising in local papers in key yachting areas.
   d. The introduction of an 'early season' discount for people buying in January or February
6. Which of the following would be an advantage of converting from a private limited to a public limited company?
   a. The firm would gain limited liability
   b. The owners would be able to maintain control over the business
   c. There may be some divorce between ownership and control

   The firm would gain access to equity markets.
7. What are the three main areas a business plan should cover? Give a brief explanation.
8. Which legal business structure would be most appropriate for techtical.com? Justify your answer.
9. Draw a break-even diagram for Techtical.com.
10. If techtical.com do manage to meet the forecasts of sales that Moloko has made, what will be their margin of safety? _____ units
11. If Moloko's business is to succeed, he has to be able to sell his software. He must ensure that his initial business plan has a marketing plan. Briefly explain the steps necessary to prepare a marketing plan.
12. Use the figures given in the case material to prepare a cash flow forecast for the first year of operation. Use the table (similar to the one above) to fill in your figures, i.e. horizontally: from March 2008 to February 2009 and vertically the rows: Revenue, Sales, **Expenses**, Set-up costs, CD costs, Manual printing, Postage and distribution, Marketing budget, **Total expenses, Net cash flow**, Opening balance, **Net cash flow,** Closing balance.

N.B. Use the following assumptions:

- All the set-up costs (software, e-commerce and design) will need to be paid out in March when he starts up.
- His sales are all made with one month's credit offered (i.e. the cash is received one month after the sales are made)
- Expenses associated with the production of the software (CD, manual and distribution costs) have to be paid in the same month as the sales are made.
- The marketing budget of R3, 600 will be spread over the year and spent monthly.

Solutions

1. **6 units**
2. **C**
3. **A**
4. **B**
5. **C**
6. **D**

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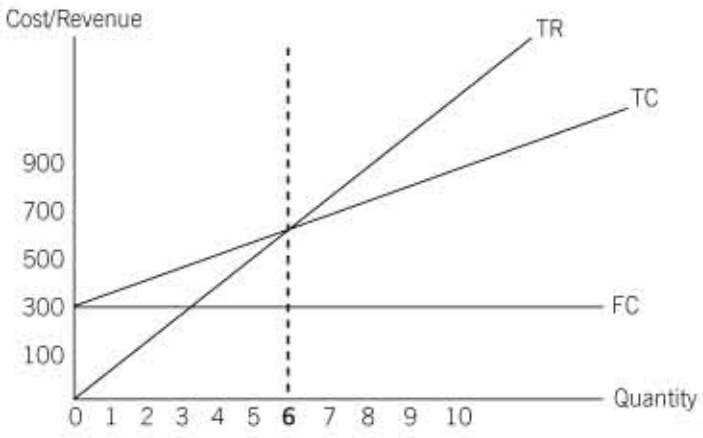
BUSINESS STUDIES GRADE 10 LESSON NOTES

7. Three main areas of a business plan.

   1. **Type of business** – in this step look at the different types of legal business structure. If you are starting up should you be a sole trader, partnership or a private limited company? What is the difference between a private and public limited company?
   2. **Marketing planning** - once you know what type of business you want to be, how can you research the possible market that may be out there? How do you write a marketing plan?
   3. **Financial planning** - no business works without money, so how do you work out the financing requirements for the business? What is meant by break-even? How do you construct a cash flow forecast, a balance sheet and a profit and loss account? (12)

8. Sole Trader. He is just starting and he intends to work from home for a start and he has not yet decided the most appropriate marketing methods to use. (2)

9.



10. Margin safety of safety is **9.**

11. The steps necessary to prepare a marketing plan.

- Market research – the first stage is to research the market and see what sort of demand might be out there, but what techniques are available to do this?
- Marketing mix – once you know the scope of the market you need to establish a marketing mix for your product.
- Marketing strategy – the final stage is to develop a strategy for how you will go about achieving the marketing objectives you have set yourself. What types of marketing tools are available to you, and which might be the most appropriate? (12)

12. Projected Cash Flow

	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Revenue												
Sales		975	1300	1625	2925	2600	2275	1625	650	650	2925	955
Expenses												
Set-up costs	6200											
CD costs	37.50	50.00	62.50	112.50	100.00	87.50	62.50	25.00	25.00	112.50	37.50	62.50
Manual printing	78.75	105.00	131.25	236.25	210.00	183.75	131.25	52.50	52.50	236.25	78.75	131.25
Postage and distribution	33.75	45.00	56.25	101.25	90.00	78.75	56.25	22.50	22.50	101.25	33.75	56.25
Marketing budget	300	300	300	300	300	300	300	300	300	300	300	300
Total expenses	6650	500	550	750	700	650	1150	400	400	750	450	550
Net cash flow	-6650	475	750	875	2225	1950	1125	1125	250	-100	2475	405
Opening balance	10,000	3350	3825	4575	5450	7675	9626	10750	11875	12125	12025	14500
Net cash flow	-6650	475	750	875	2225	1950	1125	1125	250	-100	2475	405
Closing balance	3350	3825	4575	5450	7675	9625	10750	11875	12125	12025	14500	16875

NB: (Sales – Total expenses = Net cash flow)
(Opening balance + Net cash flow = Closing balance)

BREAK EVEN OUTPUT AND MARGIN OF SAFETY

$$\text{Break even Output} = \frac{\text{Fixed Cost}}{\text{Selling price} - \text{Variable Cost}} \text{ Or } \frac{\text{Fixed Cost}}{\text{Contribution (per unit)}}$$

Margin of Safety = Total units sold for the month – (less) Break even output

BUSINESS FUNCTIONS

Administration function includes among the others the following functions:

- Clerical work – recording and reporting of information, record keeping and communication.
- Overview of quality control.
- Use of Information technology (IT) systems.
- Managing estates, i.e. cleaning, health and safety, maintenance and security.

Task 1

Read the scenario below and answer the questions that follow.

South African Airways (SAA) sells discounted air tickets via the Internet to business travellers. Due to the rapid growth in sales, the company is considering whether to establish an Administration Department, which would support other functional areas within the organisation.

You have been employed to write a **report** for the Board of Directors of South African Airways (SAA), which will assist the company in formulating its views on this matter.

Prepare a report for the Board of Directors of South African Airways (SAA) identifying:

a. why it is important to engage in business planning when considering major changes to business operations.

b. the range of activities undertaken by the Administration Department with specific reference to:

   (i) communication systems and procedures within the company

   (ii) management information

   (iii) secretarial support.

SOLUTION

Report prepared for the Board of Directors of South African Airways

1 **Brief**

1.1 To explain the importance of business planning.

1.2 To identify the activities undertaken by the administration function.

2 The importance of business planning

1.1 Business planning involves a systematic analysis of business operations, activities and structure in order to identify the long-term development plans of the business organisation.

2.2 A well-structured planning process will incorporate 3 inter-related plans:

2.2.1 a strategic plan will identify the long-term goals and objectives of the organisation.

2.2.2 an operational plan details how these long-term plans will be implemented during the period of the plan.

2.2.3 an administrative plan details the business support needs which will need to be developed in order to ensure the successful implementation of the overall strategic plan.

2.3 If a business organisation does not engage in planning activities there is likely to be an adverse impact upon business performance for the following reasons:

2.3.1 no control of business operations

2.3.2 no understanding of market needs

2.3.3 no targets established to monitor performance

2.3.4 no quality standards established

2.3.5 no financial performance indicators identified.

2.4 A business organisation planning to implement major changes to its business operations will require the following:

2.4.1 up-to-date, accurate and reliable management information that will inform management decisions

2.4.2 targets will need to be established which are based upon accurate research and information, presented in a format that promotes understanding

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BUSINESS STUDIES GRADE 10 LESSON NOTES

2.4.3 effective communications between the functional areas within the business in order to co-ordinate the planning process

2.4.4 monitoring systems will need to be established in order to assess business performance against the set targets

2.4.5 consultation with key stakeholders such as individual employees, their managers/supervisors and staff teams will enable them to understand their contribution to the overall success of the business.

3 Activities undertaken by the Administration function

3.1 The administration function ensures that the business establishes systems and Procedures that allow its activities to operate as smoothly as possible.

3.2 The administration function also has an important role to play in ensuring that systems are in place which promote effective and efficient communications throughout the business. Towards this end, the administration function can take the lead in establishing a communications strategy and monitoring its implementation. This will allow the administration function to ensure that systems are in place which support the needs of the other functional areas including:

3.2.1 secretarial and administrative support

3.2.2 production of management reports and other business communications

3.3.3 arranging meetings including the distribution of agenda and minutes.

3.3.4 producing staff newsletters and other methods of communications which provide general information for staff.

3.3 The administration function should also ensure that systems and procedures are controlled and monitored in order to meet the changing needs of the organisation. As such, the function will be responsible for such areas as telecommunications, information technology, security and transport.

3.4 The administration function has an important role to play in ensuring that management information systems generate up-to-date and reliable information for managers. It will therefore be involved in drawing-up plans for the introduction, development and replacement of computer hardware and associated software packages.

3.5 The administration function will also ensure that the business has systems in place to meet its statutory duties and responsibilities including Health and Safety, the production of the Annual Report and any information that may be required by the government including the tax authorities.

4 Recommendations

4.1 South African Airways (SAA) should establish a planning process that clearly identifies its long-term business goals and objectives.

4.2 The planning process should clearly identify the administrative support needs of the business and draw-up an administrative plan that will assist the implementation of the strategic plan.

4.3 The establishment of an Administrative Support Department would be an effective way of ensuring that the administrative plan was implemented.

Notes:

Answers to this question should integrate the importance of **business planning because the company intends implementing major changes that will affect the Business Plan,** and describe various **activities undertaken by the Administration function**.

2007 SENIOR CERTIFICATE EXAMINATION TIMETABLE

DEPARTMENT OF EDUCATION

2007 SENIOR CERTIFICATE EXAMINATION TIMETABLE FOR THE NATIONAL QUESTION PAPERS

OCTOBER/NOVEMBER 2007

Week 1	09h00	14h00
Monday 08/10		
Wednesday 10/10	English 1st & 2nd Lang HG/SG P1 Language	
Thursday 11/10	English 1st & 2nd Lang HG/SG P2 Literature	English 1st & 2nd Lang HG/SG P3 Creative writing (Part-time learners)
Friday 12/10		
Week 2	**09h00**	**14h00**
Monday 15/10	Mathematics HG/SG P1 Functional Mathematics P1 Commercial Mathematics	
Tuesday 16/10		
Wednesday 17/10	Mathematics HG/SG P2 Functional Mathematics P2	
Thursday 18/10	Geography Theory	Geography Mapwork
Friday 19/10	(Navratri)	
Week 3	**09h00**	**14h00**
Monday 22/10	Accounting HG/SG	
Tuesday 23/10		
Wednesday 24/10	Business Economics	
Thursday 25/10		
Friday 26/10 Afrikaans	1st & 2nd Lang HG/SG P1 Language	

Week4	09h00	14h00
Monday 29/10	Afrikaans 1st & 2nd Lang HG/SG P2 Literature	Afrikaans 1st & 2nd Lang HG/SG P3 Creative writing (Part-time learners)
Tuesday 30/10		
Wednesday 31/10	Economics	
Thursday 01/11		
Friday 02/11	Physical Science HG/SG P 1 Functional Physical Science P1	
Week 5	**09h00**	**14h00**
Monday 05/11	Physical Science HG/SG P2 Functional Physical Science P2	
Tuesday 06/11		
Wednesday 07/11	Biology HG/SG P1 Physiology HG/SG	
Thursday 08/11	(Diwali)	
Friday 09/11	(Diwali)	
Week 6	**09h00**	**14h00**
Monday 12/11	Biology HG/SG P2	
Tuesday 13/11		
Wednesday 14/11	Agricultural Science P1	
Thursday 15/11		
Friday 16/11	Agricultural Science P2	
Week 7	**09h00**	**14h00**
Monday 19 /11	History HG/SG P1	
Tuesday 20/11		
Wednesday 21/11	History HG/SG P2	

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BUSINESS STUDIES GRADE 11 LESSON NOTES

BUSINESS FUNCTIONS

Learning Outcome 3: Business Operation
11.4.3: Analyse and discuss the following aspects of the marketing function: marketing activities; product policy; pricing policy; distribution; marketing communication; foreign marketing

Marketing includes the following activities:

- Product – advice on new product, development, product improvement, extension strategies and target markets.
- Promotion and communication strategies
- Pricing of product
- Market research
- Sales strategies
- The sales team

Task 1

Read the scenario below and answer the questions that follow.

South African Agriculture exports specialises in the shipping of foodstuffs throughout the world. The organisation is concerned about the recent poor publicity regarding the safety of certain foods and how this adverse publicity will impact upon their businesses.

Draw up a briefing sheet for South African Agriculture exports showing clearly:

(a) the possible impact on the farming industry due to changes in market conditions

(b) how the marketing mix could be used to influence the level of consumer demand.

SOLUTION

A (ii) Prices in a competitive market are determined by demand and supply. Changes in the conditions of demand will influence the price of a particular product, in this case the specific foodstuffs that have been the subject of safety concerns.

(iii) In such circumstances the actions of consumers will serve to reduce demand *regardless of the price* and such an action will result in lower market prices for the foodstuffs in question.

(iv) A reduction in market demand results in less foodstuffs being shipped by the organisation leading to less business and a reduction in turnover.

(v) Less business also results in lower profit margins and the organisation may need to instigate efficiency savings in order to maintain profit levels. They might choose to consider reducing labour cost that may result in possible redundancies.

(vi) South African Agriculture exports may also come under pressure from the food producers (farmers) as they too see their profit margins fall. As a result, they may seek to persuade the government to reduce their contract costs for shipping the foodstuffs, thereby putting greater pressure on profit margins.

(vii) South African Agriculture exports and farmers may consider re-structuring their business activities in order to switch to more profitable areas of business activity.

B (i) Successful marketing involves a combination, or 'mix', of 4 critical elements:

- price
- product
- promotion
- place

(ii) Commonly referred to as 'the 4 p's', the marketing mix is used by business organisations as a management tool to monitor market conditions and adapt their marketing strategy in such a way as to meet sales targets.

(iii) South African Agriculture exports and the producers of the foodstuffs in question, can use the components of the marketing mix to influence market demand in a number of ways:

1 Reduce price to increase demand. South African Agriculture exports is not a direct producer or manufacturer of foodstuffs. The impact of 'food scares' will therefore have an indirect impact on its business due to the reduction in volume of specific foodstuffs demanded in the global market. The forum may offer special discounts on the distribution of other products in order to stimulate market demand. This may include giving discounts for bulk orders and special rates for repeat contracts.

2 Organise publicity campaigns to alleviate consumer concerns over the safety of foodstuffs. For example, South African Agriculture exports could issue press releases and organise special promotions at trade fairs.

3 Engage in a dialogue with the Government in order to obtain their support for the campaign. The Government has important economic and political links with international organisations throughout the world that it could use to influence the policies of other countries towards alleviating the concerns over food safety.

4 Promote business networking activities with other organisations facing similar problems (farmers, suppliers, manufacturers, and distributors) in order that these activities can be co-ordinated on a national/international basis. Such networking activities could involve identifying new markets on the basis of in-depth market research, mounting a vigorous advertising campaign which emphasises the quality and brand image of the foodstuffs and organising targeted marketing activities on the basis of disposable income and market segmentation.

5 A network of organisations could also employ specialist food scientists who may be able to provide technical advice and research that identifies the safety of foodstuffs in the face of consumer fears.

Note:

This topic will provide you with the opportunity to show your understanding of the workings of the market in a practical setting and the second part of the question will an able you to describe in detail the role and importance of the marketing mix.

Catch a wake up

"Until you value yourself, you won't value your time.
Until you value your time, you will not do anything with it."
(M Scott Peck)

It is always a good idea to look closely at your personal time habits and to make changes now so that you get the most out of each day!

Knowing how you spend your time may help you save in certain areas. You can then use this 'spare' time to your advantage.

There are 24 hours in a day and seven days in a week. That's all we have to work with. Keep in mind that in some areas we don't have much free choice about how we spend our time:

- Most of us need to sleep about eight hours out of 24, so there goes 56 hours every week.
- Out of the remaining 112 hours left in a week, school uses up at least another 30 hours per week.
- That leaves about 82 hours a week to use as you choose.

How do you use these remaining 82 hours? Think about it! In the next weeks we will be giving you tools to help you make your time count. In the meantime, start drawing up your own personal timetable and monitor how much time you spend on your daily activities. Chances are you'll find out some surprising things about your own time-keeping habits!

MATHEMATICAL LITERACY GRADE 10 EXAMINATION

Question 1

TABLE 1 below shows a summary of the water accounts for Mr DG Moletsane for a period of eight months. The first 5,6 kilolitres (kl) used for each month, is free. (Remember that 1 000 litres = 1 kl.)

TABLE 1: Mr DG Moletsane's water account for a period of eight months

Month	Total kilolitres used	Kilolitres free	Kilolitres to be paid for	Cost of each kilolitre (RANDS)	Amount due (RANDS)
August	22,0	5,6	16,4	4,57	75,95
September	28,0	5,6	22,4	4,57	102,37
October	23,5	5,6	17,9	4,57	81,80
November	20,6	5,6	15	4,57	68,5
December	27,9	5,6	22,3	4,57	101,91
January	25,10	5,6	(QUESTION 4.1)	4,57	89,12
February	24,6	5,6	19	4,57	(QUESTION 4.2)
March	(QUESTION 4.4)	5,6	(QUESTION 4.3)	4,57	98,70

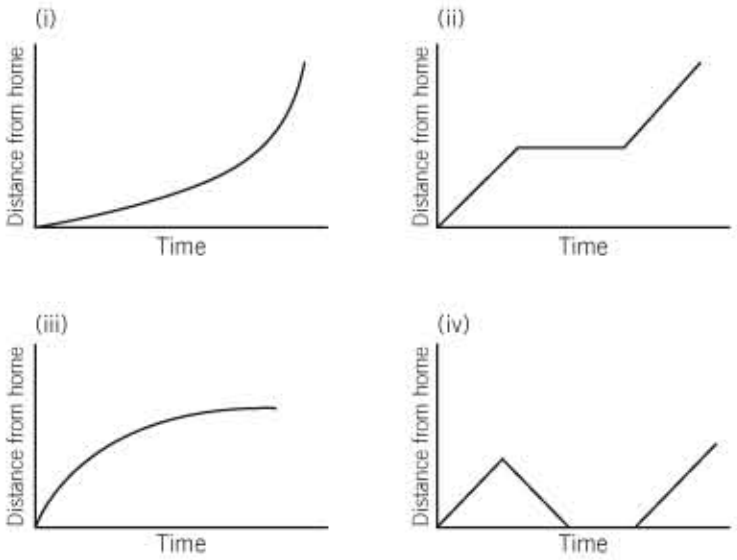
1 How many litres of water were consumed in September? (1)
2 What is the highest amount that Mr Moletsane had paid for water used? (1)
3 In which month did Mr Moletsane pay the least for water used? (1)
4 Now complete the outstanding values for the table above. Write down the question numbers (4.1 to 4.4) and show ALL calculations next to it. (7)
5 The water usage for August was 22 kℓ and for September it was 28 kℓ. Calculate the percentage increase for the total number of kilolitres (kℓ) of water used for August and September. (3)
6 Calculate the total amount paid by Mr Moletsane for water from August to January. (2)
7 The interest rate for value added tax (VAT) is currently 14%. Calculate the VAT payable on the amount calculated in QUESTION 6. (3)
8 Assume that Mr Moletsane did not pay his account for September. (Municipal accounts are to be paid on the last day of every month.) If Mr Moletsane only pays this amount at the end of five months, calculate the interest that is payable on this amount (excluding VAT) IF:
8.1 The municipal charges 12% per annum interest compounded monthly (4)
8.2 The municipal charges 12% per annum simple interest (3)
8.3 Explain which of compound interest or simple interest you expect to be higher and give a reason for your answer. (2)

Solution 1

1 28 kl ✓
2 R102,37 ✓
3 November ✓
4.1 19,5 kl ✓
4.2 19 × R4,57 ✓
= R86,83 ✓
4.3 R98,70 ÷ R4,57 ✓
= 21,60 ✓
4.4 21,60 + 5,6 ✓
= 27,2 kl ✓
5 Increase = 28kl – 22kl
= 6 kl ✓
Percentage increase = 6/ 22 × 100 ✓
= 27,27 % ✓
6 R74, 95 + R102,37 + R81,80 + R 68,55 + R101,91 + R89,12
= R518,70 ✓✓
7 ✓ ✓
VAT = 14/100 ×R518 ,70
= R72,62 ✓
8.1 $A = P(1 + \frac{r}{100})^n$ ✓
$= R102,37\left(1 + \frac{1}{100}\right)^5$ ✓
= R 107,59 ✓
C.I = R107,59 – R 102,37
= R5,22 ✓
8.2 $S.I = P \times \frac{r}{100} \times n$ ✓
$= R102,37 \times \frac{1}{100} \times 5$ ✓
= R5,12 ✓
8.3 Compound Interest is higher✓
Interest is paid on interest and not only on capital amount as is the case with simple interest ✓

Question 2

1 Study the graphs below and match each graph to one of the descriptions that follow:



1.1 Pulane was driving her car from home to work and everything went fine until the engine of the car started cutting out and the car eventually came to a standstill. (2)
1.2 Kelly was walking from home to school as usual, when she realised that she had forgotten her Mathematical Literacy exercise books and lunch at home, so she went back home to fetch them and she returned to school. (2)
1.3 Initially Mr Martin walked slowly from his home to the office. However, when he realised that he was going to be late for a meeting, he started walking faster and faster. (2)
1.4 Whilst on my way from home to town, I stopped to help a friend who had a flat tyre before I continued my journey. (2)
2 Kelly and Denzil can each walk approximately 6 km in one hour. It takes each one of them one hour to cycle 18 km.
2.1 If Kelly lives a quarter of an hour's walk from school, approximately (3)
2.2 how many kilometres away from school does she live? (3)
2.3 How long will it take Kelly to cycle to school? (5)
Denzil always cycles to school and it usually takes him approximately 20 minutes. Yesterday when he was half way to school, his bicycle tyre got a puncture and he had to walk the rest of the way to school. Calculate how long it took Denzil to get to school yesterday. **[19]**

Solution 2

1.1 ii ✓✓
1.2 iv ✓✓
1.3 i ✓✓
1.4 ii ✓✓
2.1 ✓
60 min : 6 km ✓
10 min : 3 km ✓
5 min : 0,5 km
∴ 15 min : 1,5 km ✓
OR Kelly can walk 6km in 1 hour. In a quarter of an hour Kelly can walk
6 km ÷ 4 = 1,5 km
✓ ✓
2.2 ✓
Kelly's school is 1,5 km away from home.
10 min : 3km ✓
5 min : 1,5 km ✓
∴ Kelly's school is 5 minutes cycle away from home. ✓
OR In 60 min she can cycle 18km
To cycle 1,5 km it will take
60 min/12 = 5 min ✓
✓

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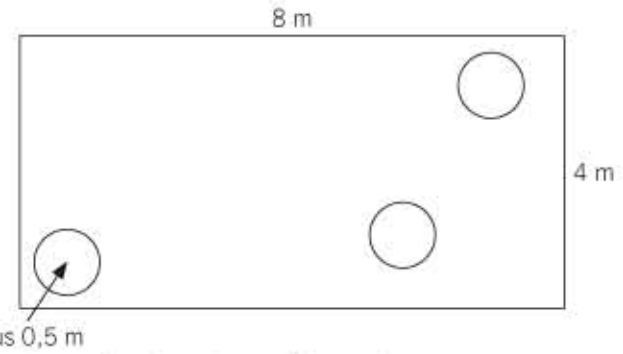
MATHEMATICAL LITERACY GRADE 10 EXAMINATION

2.3 In 60 minutes Denzil can cycle 18 km. In 20 minutes Denzil can cycle 6 km, so Denzil lives 6 km away from school. ✓
He cycled for 3 km and walked for 3 km. ✓
60/3 min : 18/3 km
10 min : 3 km ∴ Time to cycle 3 km = 10 min. ✓
Time taken to walk 3km = 60 min ÷ 2 = 30 min. ✓
Yesterday , it took Denzil 10 min + 30 min = 40 min to get to school.
✓

Question 3

1 Jane and Tom are considering redesigning their front garden. The length of the garden is 8 metres and the width is 4 metres. They plan to plant several trees in the garden and to cover the remainder of the garden with grass. The illustration below provides a view from above of their front garden. Each hole shown below, has a radius of 0,5 m.



1.1 Determine the total area of the garden. (3)
1.2 Determine the area of ONE of the holes that have been dug out for the trees if the radius of the hole is 0,5 m. (3)
1.3 Determine the area to be covered by grass (that is excluding the holes made for the trees). (3)

2 Jane and Tom want to use a portion of their plot, on the side of their house, to plant vegetables. A rough sketch of this portion is shown below.

If cabbages need a circular area with a diameter of 25 cm to grow, what is the maximum number of cabbages that Jane and Tom can plant along the length of the garden? (2)

3 They have hired workers to help in their garden. The graph below shows payments received against hours worked.

Use the graph above to answer the following questions:

3.1 How much would a worker receive for 12 hours of work? (1)
3.2 How many hours would someone have to work to earn a payment of R200? (1)
3.3 Determine the hourly rate used in the graph. (2)
3.4 Find an equation that could be used to calculate the payment due for hours worked. (2)
3.5 The workers requested that a transport allowance of R35 be added to their payment. Show how the equation obtained in QUESTION 4.4 should be adapted to include this allowance in their payment. (1)

Solution 3

1.1 $A = l \times b$ ✓
$= 8\text{ m} \times 4\text{m}$ ✓
$= 32\text{ m}^2$ ✓

1.2 $A = \pi \times r \times r$ ✓
$= \pi \times 0{,}5\text{m} \times 0{,}5\text{m}$ ✓
$= 0{,}79\text{ m}^2$ ✓

1.3 ✓ ✓
Grass needed $= 32\text{ m}^2 - 3(0{,}79\text{ m}^2)$
$= 29{,}63\text{ m}^2$ ✓

2 Number of cabbages = 205 cm ÷ 25 cm ✓
= 8 ✓

3.1 R300 ✓
3.2 8 hours ✓
3.3 R100 : 4 hrs ✓
i.e. R25 per hour ✓
3.4 *Payment = R25 × no of hours worked* ✓ ✓
3.5 *Payment = R25 × no of hours worked + 35* ✓

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