Aligned to DBE
Revised ATPs

Mathematical Literacy

Navigation pack

FET PHASE
GRADE 12

Platinum

Spot On

CLASSROOM MATHEMATICS

X-kit Achieve!

Pearson South Africa (Pty) Ltd

4th floor, Auto Atlantic Building, Corner of Hertzog Boulevard and Heerengracht, Cape Town, 8001

Offices in Johannesburg, Durban, East London, Polokwane, Bloemfontein, Rustenburg and Mbombela.

Mathematical Literacy Grade 12 Navigation Pack

Print ISBN: 9781485720393

Print GUID: 85C00947-FCA4-4672-BC0B-D27E01B14985

EPDF ISBN: 9781485720478

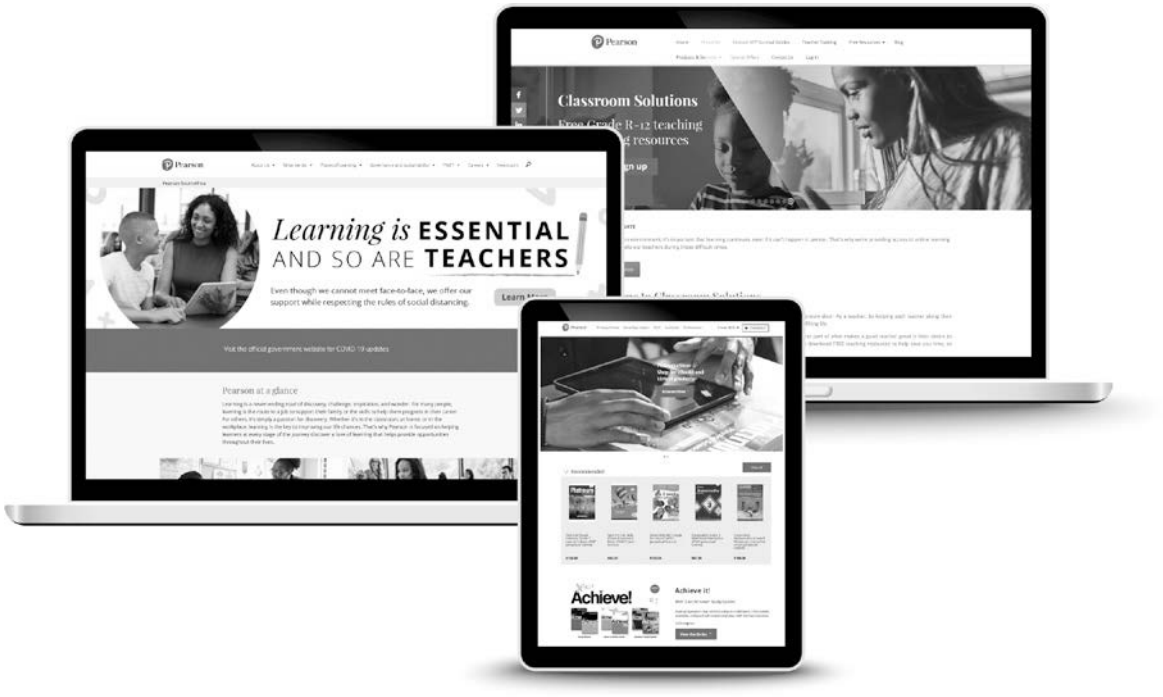
EPDF GUID: 505DDC30-1DEC-40D8-83D1-084A44AB8131

Cover design by Pearson Media Hub

Typesetting by Lizette Watkiss

Contents

Find us online



Pearson

We remain committed to support you and continue to provide great service to our valued partners in education.

Visit **za.pearson.com** for product information, educational news, access catalogues or to contact your Pearson key account manager to assist you on your teaching journey.

Classroom Solutions

Classroom Solutions was designed to help save you time, so you can spend more time getting creative about learning. Join a growing community of teachers and access free teaching resources for Grade R to 12, such as lesson plans, worksheets, videos, podcasts and more.

Register for free at **classroomsolutions.co.za**

Pearson eStore

Pearson offers the widest range of CAPS-approved content in South Africa, available in various eBook formats to suit you and your learners' needs.

Browse and purchase eBooks at **shop.pearson.co.za**

Pearson

Dear Teacher

The National State of Disaster due to the Covid-19 pandemic has resulted in the disruption of Education in South Africa and the loss of valuable teaching time and disruption of the school calendar.

As a result of this, the DBE has created and released revised Annual Teaching Plans (ATPs) to assist schools and teachers in ensuring the 2021 school year is completed. The 2021 ATPs are based on the revised ATPs that were developed in 2020. It is important to note that fundamental and core topics are retained in the 2021 ATPs. Some of the strategies that have been used in the process of developing the 2021 DBE ATPs are:

- reduction of content covered in certain topics
- merging of topics
- deleting topics
- revising the assessment guidelines
- reduction in teaching time for certain topics
- resequencing of topics/concepts

At Pearson South Africa, we believe that education is the key to every individual's success. To ensure that despite the challenges, teachers and learners can meet all the necessary learning outcomes for the year, we have created the Navigation Pack, a free resource to support teachers and learners during this challenging time.

The Navigation Pack aims to summarise and highlight the changes in the 2021 DBE ATP and provide teachers and learners with worksheets that focus on impacted topics in the curriculum.

Due to resequencing of topics, the order of topics in the textbook that is currently used in the classroom may not be aligned to the new sequence of topics in the ATP. The Navigation Pack has a set of assessments based on the Section 4 changes and the revised assessment guidelines.

Covid-19 safety guidelines for teachers and learners

Gatherings at school

Where schools are open for learning, it is up to management to take decisive action to ensure sites are not simultaneously used for other functions such as shelters or treatment units in order to reduce the risk.

Implement social distancing practices that may include:

- A staggered timetable, where teachers and learners do not arrive/leave at the same time for the beginning and end of the school day.
- Cancelling any community meetings/events such as assemblies, cake sales, market day, tuckshop, after-care classes, matric dance, Eisteddfod and other events.
- Cancelling any extra-mural activities such as ballet classes, swimming lessons, sport games, music class and other events that create a crowd gathering.
- Teaching and modeling creating space and avoiding unnecessary touching.
- Limiting movement and interaction between classes.
- Schools with an established feeding scheme plan are to ensure that hygiene and social distancing is always implemented. Teachers and staff members assisting with food distribution are to wear masks, sanitise prior to issuing food items and learners are to stand 1,5m apart in the queue.

Wear a mask at all times.

1. Restrooms/toilets

Hand washing

Washing hands with soap and water or using alcohol-based hand sanitisers is one of the most important ways to help everybody stay healthy at school. Critical to this is preparing and maintaining handwashing stations with soap and water at the toilet and in each classroom.

Teachers and learners should always wash their hands after:

- eating
- entering the classroom
- using the toilet
- blowing your nose or coughing
- touching tears, mucous, saliva, blood or sweat.

2. Premises and Classroom setting

When schools open, classroom settings should be altered in order to promote hygiene, safety and social distancing.

Changed classroom settings may include:

- Cleaning and disinfecting school buildings, classrooms and especially sanitation of facilities at least once a day, particularly surfaces that are touched by many people (railings, lunch tables, sports equipment, door and window handles, toys, teaching and learning tools etc.).
- Ensure the proper ventilation and fresh flow of air through classrooms.
- Providing learners with vital information about how to protect themselves by incorporating the importance of hygiene, handwashing and other measures of protecting themselves, into the lessons.
- Promoting best handwashing and hygiene practices and providing hygiene supplies.

- Prepare and maintain handwashing stations with soap and water, and if possible, place alcohol-based hand sanitisers in each classroom, at entrances and exits, and near lunchrooms and toilets.

- Ensure teachers and learners wear a mask at all times.

Social distancing

- Space the learners out in the classroom (or outdoors) – try to keep learners separated by a minimum of 1,5m.

- Learners should not share cups, eating utensils, or food
- Do not let learners eat items that fall on the floor or chew on pencils or other objects
- Create space for learners' desks to be at least 1,5m apart
- Learners are not to exceed 30 per class or 50% of original class size

- Avoid close contact, like shaking hands, hugging or kissing

3. Social behaviour

It is extremely vital during a pandemic that focus is not only directed towards optimal physical health and hygiene but finding ways to facilitate mental health support.

- Treat everybody with respect and empathy – no teasing about Covid-19.
- Encourage kindness towards each other and avoid any stereotyping when talking about the virus.
- Stay home if you have a temperature or are ill.
- Do not touch people who are ill, but be empathetic.

Wear a mask at all times.

How to use this Navigation Pack

Revised DBE Teaching Plan: Comprehensive summary of the CAPS topics according to the revised ATPs.

Navigation Plan: Link to the resources in the Navigation Pack.

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	**TOPIC/UNIT**	**UNIT/CONTENT SPECIFIC CONCEPTS**	**TIME**	**LINKS TO PEARSON NAVIGATION PACK**	**PAGE REFERENCE**
Finance	Taxation	• Personal income tax	2 hrs		
		• Taxable and non-taxable income	3 hrs		
		• UIF and VAT *10	4 hrs	Navigation Pack: Targeted Worksheet 1	Page 15
	Consolidation and revision [16 hrs]		16 hrs		
HYDROSPHERE *11					
ASSESSMENT		End of year exam		Navigation Pack: Paper 1	Page 45
		End of year exam		Navigation Pack: Paper 2	Page 56
TOTAL HOURS = 25					

*10 This topic has been moved from term 1 to term 4.

Assessments for the Term as per the revised ATPs and the Section 4 amendments.

Link to a targeted worksheet in the Navigation Pack, that focus on impacted or challenging topics in the curriculum.

Footnotes provide any additional information.

Link to an exemplar assessment in the Navigation Pack, that was created with Section 4 and curriculum changes in mind.

Navigation Guide

Term 1

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	TOPIC/UNIT	UNIT/CONTENT SPECIFIC CONCEPTS	TIME	LINKS TO PEARSON NAVIGATION PACK	PAGE REFERENCE
Finance	Financial documents	• Bank statement • Till slips • Cell phone accounts • Landline bills • Utility bills and account statements • Salary slips • Claim forms • Quotations	27 hours		
	Taxation	• Personal income tax • Taxable and non-taxable income • UIF and VAT			
	Tariff Systems	• Electricity tariffs • water tariffs • telephone tariffs • transport tariffs • bank tariffs			
	Income and Expenditure	• Comparison of income and expenditure/ profit values • Budgets to show comparison of projected and actual expenditure and profit/ loss values. • municipal budgets • government budgets • fund raising budgets • individual and business budgets			
	Cost Price and selling price	• Cost of producing/ manufacturing /selling price and percentage profit. • Finding cost price, selling price, profit/loss in related questions			
	Break-even analysis	• Determine break-even values from tables and graphs • Interpret and use graphs to answer questions			

Term 1

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	TOPIC/UNIT	UNIT/CONTENT SPECIFIC CONCEPTS	TIME	LINKS TO PEARSON NAVIGATION PACK	PAGE REFERENCE
Data handling	Developing Questions	• Questions should be clear and to the point	9 hours		
	Collecting data	• Interviews; observations; questionnaires • National and global issues			
	Classifying and Organising data	• Categorical and Numerical • Develop and use data collection instruments i.e. interview; questions; questionnaires • Sort numerical and categorical data using categories and class intervals, tallies and frequency table.			
	Summarising data	• Quartile – interquartile range (IQR) • Calculate and analyse measures of central tendency and spread			
Revision	Finance		4,5 hours		
	Data handling		4,5 hours		
			TOTAL HOURS = 47		

Term 2

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	**TOPIC/UNIT**	**UNIT/CONTENT SPECIFIC CONCEPTS**	**TIME**	**LINKS TO PEARSON NAVIGATION PACK**	**PAGE REFERENCE**
Data handling	Representing data	• Interpreting pie charts • Realise that histograms represent continuous data • Interpret and answer questions relating to histograms • Appreciate the difference between the histogram and bar graphs • Line & broken-line graphs show change of data over a period of time • Scatter plots give an indication of the strength of the relationship between two variables • Interpret Box-and-whisker plots created by five-number summaries	3 hours	• Navigation Pack: Targeted Worksheet: Data handling	• Page 21–23
	Interpret and analyse data	• Identify and describe trends and sources of bias. • Identify misleading representations and data summaries	2 hours	• Navigation Pack: Targeted Worksheet: Data handlin	• Page 21–23
Finance	Hire Purchase/ residual/balloon loans (interest rate, interest repayment.	• Understand the pros and cons of Hire Purchase (HP) systems • Balloon payments	4,5 hours	• Navigation Pack: Targeted Worksheet: Finance	• Page 18–20
	Banking/interest and loans	• Interest rate is the rate at which interest is earned or paid. • Interest can be calculated as simple or compound interest. • Repo rate • Interpret and analyse a bank statement	4,5 hours	• Navigation Pack: Targeted Worksheet: Finance	• Page 18–20
	Exchange rates	• Exchange rates • Conversions between currencies. • Recognise the meaning of strong and weak in relation to currencies.	4,5 hours	• Navigation Pack: Targeted Worksheet: Finance	• Page 18–20
	Inflation	• Inflation refers to the general increase of prices and decreasing purchasing power of money measured against a particular standard.	2 hours	• Navigation Pack: Targeted Worksheet: Finance	• Page 18–20

Term 2

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	TOPIC/UNIT	UNIT/CONTENT SPECIFIC CONCEPTS	TIME	LINKS TO PEARSON NAVIGATION PACK	PAGE REFERENCE
Maps and Plans Measurement	Scale	• Scales are used to determine how the actual distance is reduced on maps, and models. • Types of scales: Verbal, number and bar scales	4,5 hours		
	Maps	• Small scale maps show large areas in a small image • Large scale maps show smaller area in more detail • A combination of maps and scales is used to navigate the route to any given destination. • Interpret street maps; national road and rail routes; strip route maps • Interpret profile route maps to answer related question. • Find locations and follow directions • Estimate distances, time travelled and cost of travel • Interpret compass directions	4,5 hours		
	Conversions Time	• Conversions to include converting between units of length, area, volume and mass as well as time.	4,5 hours	• Navigation Pack: Targeted Worksheet: Measurement	• Page 24–26
	Perimeter	• Perimeter is the length of the outside boundary of a shape • Calculate perimeter of circles and parts thereof, rectangles, squares, triangles etc.	2 hours	• Navigation Pack: Targeted Worksheet: Measurement	• Page 24–26
	Area and volume	• Calculate area and surface area, and volume of cylinders and rectangular boxes • Answer related questions.	4 hours	• Navigation Pack: Targeted Worksheet: Measurement	• Page 24–26

Term 2

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	TOPIC/UNIT	UNIT/CONTENT SPECIFIC CONCEPTS	TIME	LINKS TO PEARSON NAVIGATION PACK	PAGE REFERENCE
	BMI	• Use BMI values and health/ growth charts. • Calculate BMI values • Answer questions relating to the health status of individuals	2 hours	• Navigation Pack: Targeted Worksheet: Measurement	• Page 24–26
Assessment		Term 2 Assignment		Navigation Pack: Term 2 Assignment	• Page 32–35
TOTAL HOURS = 42					

REVISED DBE ANNUAL TEACHING PLAN	NAVIGATION PLAN

Term 3

THEMES/TOPIC	TOPIC/UNIT	UNIT/CONTENT SPECIFIC CONCEPTS	TIME	LINKS TO PEARSON NAVIGATION PACK	PAGE REFERENCE
Maps, plans and other representations of the physical world	Scales and Plans	• Scale: ratio/bar • Determine actual dimensions using a given scale and determine a suitable scale to draw a plan.	9 hours		
	Models	• Solving packaging problems, • 2D packaging options, item arrangements and estimating material quantities. • 3D scale models			
Probability		• Probability of simple events • Likelihood of an event occurring • Interpret and answer questions relating to tree diagrams	9 hours		
Revision	Maps and Plans Data handling Probability		9 hours		
Assessment		Term 3 Exemplar Exam Paper 1	3 hours	• Navigation Pack: Term 3 Exemplar Paper 1	• Page 44–58
		TOTAL HOURS = 30			

Term 4

REVISED DBE ANNUAL TEACHING PLAN				NAVIGATION PLAN	
THEMES/TOPIC	TOPIC/UNIT	UNIT/CONTENT SPECIFIC CONCEPTS	TIME	LINKS TO PEARSON NAVIGATION PACK	PAGE REFERENCE
Revision	Taxation	• Personal income tax	4,5 hours		
	Tariff systems	• Electricity, water and sanitation tariffs.			
	Break-even analysis	• Cost, sales revenue, break-even point			
	Measurement	• Perimeter, area and volume	4,5 hours		
	Data	• Data representation and analysis			
	Maps and scales	• Use of ratio and bar scale to find distances	4,5 hours		
	Finance				
Assessment		Term 3 Exemplar Exam Paper 2	3 hours	• Navigation Pack: Term4 Exemplar Paper 2	• Page 62–76
		TOTAL HOURS = 16,5			

Targeted Worksheets

Targeted Worksheet 1

TARGETED WORKSHEET	TOPIC IN CAPS
1	Finance
2	Data handling
3	Measurement

Topic: Finance

Content summary

- Hire Purchase (HP) deals are offered on most household goods. Goods bought are on hire until fully paid off. Simple interest rate is charged on HP deals.
- Interest is the fee paid for borrowing money or money added to the amount invested.
- Repo rate is the interest charged to banks for borrowing from the Reserve bank. This affects the interest rates for investments.
- Interest is calculated as either Simple interest or Compound interest
  - (Application of $A = P(1 + i.n)$ or $A = P(1 + i)^n$)
  - [For interest calculations learners are not supposed to use formulae but rather use previous values to calculate interest.]
- Banks offer three types of accounts: accounts for daily transactions; investment accounts and loan accounts.
- Bank charges include all fees and charges for all transactions.
- Learners should familiarise themselves with bank statements i.e. do calculations involving debit, credit and balance of accounts.
- Inflation refers to the general increase or decrease in the purchasing power of money over a period of time, measured against a particular standard.
- SARS (South African Revenue Service) is responsible for the collection of taxes. These are the main sources of income for the government.
- Learners should be able to use SARS tables to do calculations involving income tax, rebates and medical aid contributions.
- Exchange rate is the price of one currency in terms of the other. The rates depend on the price of goods and services provided by the various countries. Learners should be able to convert from one currency to the other depending on the prevailing exchange rate.

Targeted Worksheet 1

Topic: Finance

Name: **Surname:**

Question 1

Sipho decides to buy a pair of sneakers online. The sneakers cost $178,57 in New York (USA) and the same pair of sneakers costs £156,49 in London (UK). The table below shows the exchange rate for the US dollar and the UK pound.

$1	ZAR 14,52
£1	ZAR 18,71

1.1 Determine the cost of the sneakers in both cities in ZAR and calculate how much Sipho would save if he buys the sneakers from the cheapest city. (6)

1.2 Sipho sees the same pair of sneakers advertised for R3 000 in the local newspaper. The price of the sneakers includes an inflation rate of 5,9%.

Determine the price of the sneakers before inflation. (3)

[9]

Question 2

Stan sees an advert for a television set. The cash price is R11 199,00 including 15% VAT. On hire purchase (HP) the monthly instalment is R526,19 for 24 months. The deposit is 10% of the cash price. Stan's network provider charges him R2,75 per minute, or part thereof, during peak time and charges him R2,25 per minute, or part thereof, during off-peak time.

2.1 Determine the price of the television set, excluding VAT. (2)

2.2 Calculate the deposit amount. (2)

2.3 Calculate the total amount payable (including deposit) if he bought the television set on HP. (3)

2.4 Stan makes a call for 9 minutes and 20 seconds during peak time. Calculate the amount his service provider will charge him. (2)

2.5 Determine the length of a call (in minutes) if Stan was charged R18,00 during off-peak hours. (2)

[11]

Question 3

Dr James is a doctor aged 48 years. He contributes to a medical aid scheme and has two dependants. He earns a monthly taxable income of R26 700,00.

The 2018/2019 SARS tax table is shown.

3.1 Calculate Dr James's annual taxable income. (2)

3.2 Determine Dr James's monthly income tax. (8)

[10]

Targeted Worksheet 1

SARS TAX TABLE 2018/2019

INCOME TAX: INDIVIDUALS AND TRUSTS 2018/2019		
Taxable income (R)	Rate of Tax (R)	**Tax bracket**
0 – 195 850	18% of taxable income	1
195 851 – 305 850	35 253 + 26% of taxable income above 195 850	2
305 851 – 423 300	63 853 + 31% of taxable income above 305 850	3
423 301 – 555 600	100 263 + 36% of taxable income above 423 300	4
555 601 – 708 310	147 891 + 39% of taxable income above 555 600	5
708 311 – 1 500 000	207 448 + 41% of taxable income above 708 310	6
1 500 001 and above	532 041 + 45% of taxable income above 1 500 000	7
TAX REBATES		
Primary	R14 067	
Secondary (Persons 65 and older)	R7 713	
Tertiary (Persons 75 and older)	R2 574	
TAX THRESHOLDS		
AGE	**TAX THRESHOLD**	
Below age 65	R78 150	
Age 65 to below 75	R121 000	
Age 75 and over	R135 300	
MEDICAL TAX CREDIT RATES 2018/2019 YEAR ASSESSMENT		
R310 per month for the taxpayer who paid the medical scheme contributions		
R310 per month for the first dependant		
R209 per month for each additional dependant(s)		

TOTAL: 30

Targeted Worksheet 2

Topic: Data handling

Content summary

- Data collection starts with the development of questions in order to collect the data.
- Data collection involves observation, interviews and questionnaires.
- When data is collected, it needs to be classified and organised. Statistical data is classified as numerical or categorical. Categorical (qualitative) data includes examples such as gender, type of animals, favourite movies and brands of cellphones.
- Numerical (quantitative) data is broken down into discrete and continuous data.
- Discrete data is data which can take only integer values i.e., number of people, number of cars.
- Continuous data is usually associated with some kind of measurement i.e. height of trees, body temperature.
- Summarising data involves finding the mean, median, mode, quartiles and range.
- Learners should interpret and answer questions relating to growth charts and BMI age growth curves.
- Data representation is done through the use of: pie charts; bar graphs; histograms; line graphs; scatter plots and box-and-whisker plots.
- Learners are not necessarily expected to draw pie charts or box-and-whisker plots but to interpret them when answering related questions.

Targeted Worksheet 2

Topic: Data handling

Name: **Surname:**

Question 1

The Mathematical Literacy marks for Grades12A, 12B and 12C learners are shown in the tables. The box-and-whisker plots showing the data are shown below the tables.

Grade 12A

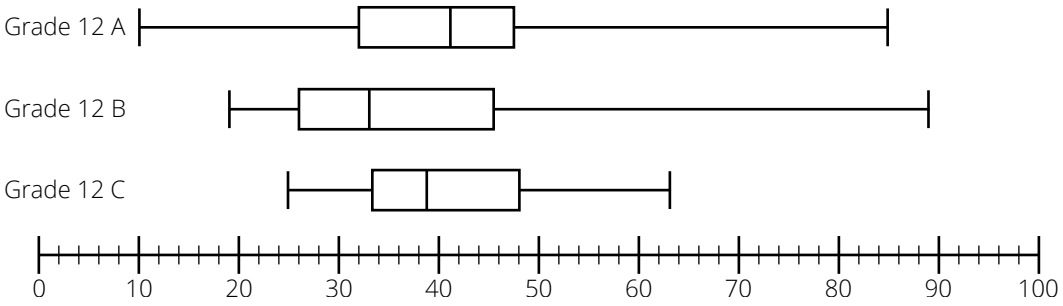
10	15	19	22	28	32	32	32	36	38	41	41	41
41	42	44	44	46	47	48	49	53	56	68	85	

Grade 12B

19	21	21	23	25	25	27	28	28	28	31	32
34	35	41	42	43	44	47	49	53	55	58	89

Grade 12C

25	28	29	32	32	33	34	36	36	36	37	38
39	41	41	42	47	47	49	55	56	57	62	63



1.1 Give a minimum mark scored by a learner in Grade 12C. (2)

1.2 Determine the modal mark for Grade 12A. (2)

1.3 Calculate the mean for Grade 12B. (2)

1.4 Give a value which is an outlier in Grade 12B. (2)

1.5 Calculate the interquartile range for Grade 12C.
You may use the formula: $IQR = Q_3 - Q_1$ (2)

1.6 Write down the values of the five-number summary for Grade 12A. (5)

1.7 If a learner is randomly chosen from Grade 12C, find the probability (as a decimal) of choosing a learner who scored more than 50 marks. (3)

1.8 What is the percentage of learners who scored less than the first quartile in Grade 12A? (2)

1.9 Calculate the range for Grade 12B. (2)

[22]

Targeted Worksheet 2

Question 2

The following table shows the results of 14 Mathematical Literacy learners in Grade 12A.

65	79	**A**	98	**B**	68	90	76	84	**B**	102	121	132	**B**

2.1 Given that the range of these marks is 78. Calculate the value of **A** which is the lowest mark.
[Note: B represents the same value for some learners and is not the highest mark.] (3)

2.2 Given that the mean for the set of data is 90. Calculate the value of **B**. (4)

2.3 Find the probability that a learner chosen will be in the top 75%. (1)

[8]

TOTAL: 30

Targeted Worksheet 3

Topic: Measurement

Content summary

- Calculate travel distance, time taken to complete a journey, speed, Body Mass Index (BMI).
- Use BMI values and Road to Health/growth charts.
- Determine the medicine dosages using formulae or growth charts.
- Calculate volume i.e., alcohol content in medicine.
- Calculate and measure perimeter and area of rectangles, triangles, circles (quarter, semi and three-quarters).
- Calculate and measure surface area of cylinders and rectangular boxes.
- Find volumes and areas of objects made up of cylinders and rectangular 3D shapes.
- Do calculations involving mass, time and temperature.

Targeted Worksheet 3

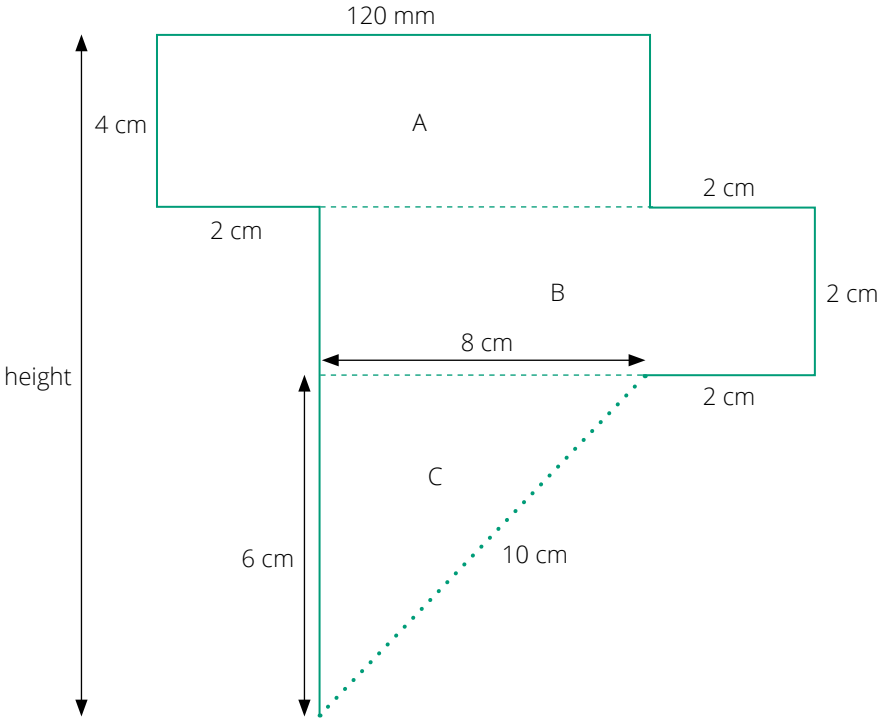
Topic: Measurement

Name: **Surname:**

Question 1

The diagram shows a patch of cloth which is used to make a dress.

Diagram of a patch of cloth



1.1.1 Calculate the perimeter of the whole patch. (3)

1.1.2 Calculate the area of rectangle A. (3)

1.1.3 Determine the height of the whole patch. (2)

1.1.4 Calculate the area of triangle C. (2)

1.2 John has a weight of 65 000 g and a height of 165 cm.

Calculate John's Body Mass Index (BMI), round off the answer to two decimal places.

You may use the formula:

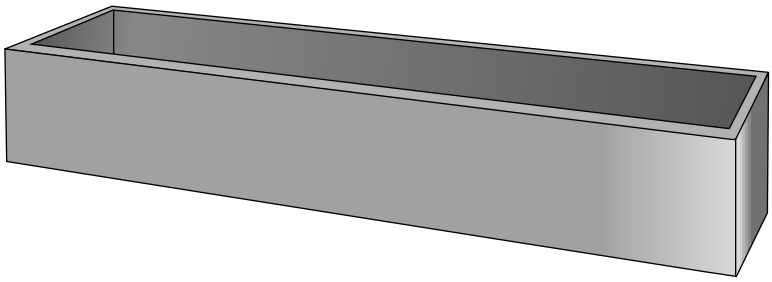
$$\text{BMI} = \frac{\text{weight in kg}}{(\text{height in metres})^2}$$ (5)

[15]

Targeted Worksheet 3

Question 2

The diagram below shows a rectangular prism-shaped water trough made of concrete.



Outer dimensions of Water trough

length = 3 m	width = 685 mm	height = 40 cm

[1 ℓ (litre) = 1 000 cm^3]

2.1 Calculate, in cm^3, the volume of concrete used to make the water trough if the trough can hold a maximum of 485 ℓ water. (7)

2.2 A cow drinks 56 ℓ water per day. Zipho states that a full trough has enough water for 8 cows per day.

Verify with calculations whether this statement is correct. (4)

2.3 Determine how long to the nearest minute, it will take to fill a half-full trough if the water flows in at a rate of 14, 5 ℓ per min. (4)

[15]

TOTAL: 30

Targeted Worksheet 1 Answers

Topic: Finance

Question 1

1.1 Cost in New York = 178,57 × 14,52
= R2 592,84 ✓
Cost in London✓
= R 2 927,93 ✓
Saving = 2 927,93 – 2 592,84 ✓
= R335,09 ✓ (6)

1.2 Price of sneakers = $\frac{3\ 000}{1{,}059}$ ✓✓
= R2 832,86 ✓ (3)

[9]

Question 2

2.1 Price excluding VAT = $\frac{11\ 999{,}00}{1{,}15}$ ✓✓ (2)

2.2 Deposit amount = 0,10 × 11 999,00 ✓
= R1 199,90 (2)

2.3 Total amount = 1 199,90 + (526,19 × 24) ✓
= 1 199,90 + 12 628,56 ✓
= R13 828,46 ✓ (3)

2.4 Total cost = 10 × 2,75 ✓
= R27,50 ✓ (2)

2.5 Length of call = $\frac{18{,}00}{2{,}25}$ ✓ (2)

[11]

Question 3

3.1 Annual taxable income = 267 000 × 12 ✓✓ (2)

3.2 Tax = 63 853 + 0,31(320 400 – 305 850) ✓✓
= 63 853 + (0,31 × 14 550) ✓
Tax payable = 68 363,50 – 14 067 ✓
= 54 296,50 – [(310 × 2 × 2) + (209 × 12)] ✓
= R44 248,50 ✓
Monthly income tax = 44 248,50 ÷ 12 ✓
= R3 695,71 ✓ (8)

[10]

TOTAL: 30

Targeted Worksheet 2 Answers

Topic: Data handling

Question 1

1.1 Minimum mark for Grade 12C = 25 ✓✓ (2)

1.2 Modal mark for Grade 12A = 41 ✓✓ (2)

1.3 Mean for Grade 12B $= \frac{19 + 21 + 21 + ... + 55 + 58 + 89}{24}$

$= \frac{900}{24}$ ✓

$= 37{,}5$ ✓ (2)

1.4 Outlier in Grade 12B = 89 ✓✓✓ (2)

1.5 IQR for Grade 12C $= Q_3 - Q_1$

$= 48 - 33{,}5$ ✓

$= 14{,}5$ ✓ (2)

1.6 Minimum=10 ✓

$Q_1 = 32$ ✓

$Q_2 = 41$ ✓

Q3 = 47,5 ✓

Maximum = 85✓ (5)

1.7 P(scored more than 50 marks) $= \frac{5}{24}$ ✓✓

$= 0{,}21$ ✓ (3)

1.8 Percentage = 25% ✓✓ (2)

1.9 Range of Grade 12B = 89 – 19 ✓

= 70 ✓ (2)

[22]

Question 2

2.1 Range = max – min

78 = 132 – A ✓

A = 132 – 78 ✓

A = 54 ✓ (3)

2.2 Mean $= \frac{\text{sum of the numbers}}{14}$

$90 = \frac{65 + 79 + B + 98 + 54 + 68 + 90 + 76 + 84 + B + 102 + 121 + 132 + B}{14}$ ✓

90 × 14 = 969 + 3B ✓

1 260 – 969 = 3B ✓

291 = 3B

$\frac{291}{3} = B$

B = 97 ✓

(4)

2.3 Probability is $\frac{1}{4}$ or 25% or 0,25 ✓ (1)

[8]

TOTAL: 30

Targeted Worksheet 3 Answers

Topic: Measurement

Question 1

1.1.1 Perimeter of patch = (120/10) + 4 + 2 + 2 + 2 + 10 + 6 + 2 + 2 + 4 ✓✓
= 46 cm ✓ (3)

1.1.2 Area of rectangle A = length breadth
= 12 × 4 ✓
= 48 cm^2 ✓✓ (3)

1.1.3 Height of patch = 6 + 2 + 4 ✓
= 12 cm ✓ (2)

1.1.4 Area of triangle C = $\frac{1}{2}$ base × height
= 0,5 × 8 × 6 ✓
= 24 cm^2 ✓ (2)

1.2 BMI = $\frac{\text{weight in kg}}{(\text{height in metres})^2}$
weight in kg: 65 000 ÷ 1 000 = 65 kg ✓
height in m: 165 ÷ 100 = 1,65 m ✓
= $\frac{65\text{ kg}}{(1{,}65\text{ m})^2}$ ✓
= 23,87511478 ✓
= 23,88 kg/m^2 ✓ (5)

[15]

Question 2

2.1 Length in cm: 3 × 100 = 300 cm ✓
width in cm = 685 ÷ 10 = 68,5 cm ✓
Volume of trough including concrete = length × breadth × height
= 300 68,5 40 ✓
= 822 000 cm^3 ✓
Volume of water if trough is full = 485 × 1 000
= 485 000 cm^3 ✓
Volume of concrete used to make a water trough = 822 000 – 485 000 ✓
= 337 000 cm^3 ✓ (7)

2.2 Amount of water per cow = 56 ℓ × 1 000 = 56 000 cm^3 ✓
Water for 8 cows
Water in trough when full 485 000 cm^3 ✓
Therefore the statement is correct. There will be enough water for 8 cows per day. ✓ (4)
OR
Amount of water per cow = 56 ℓ ✓
Water for 8 cows = 56 × 8 = 448 ℓ ✓
Water in the trough when full = 485 ℓ ✓
Therefore the statement is correct. There will be enough water for 8 cows per day. ✓ (4)

Targeted Worksheet 3 Answers

2.3 Volume of half-full trough = $\frac{485\,000}{2}$ = 242 500 cm^3 ✓
rate of flow = 14,5 × 1 000 = 14 500 cm^3 per min ✓
time taken to fill half-full trough: $\frac{242\,000}{14\,500}$ = 16,724137931 min ✓
= 17 min ✓ (4)

OR
Volume of half-full trough = $\frac{485}{2}$ = 242,5 ℓ ✓
Rate of flow = 14,5 ℓ per min ✓
Time taken to fill half-full trough minutes ✓
= 17 min ✓ (4)
[15]

[30]

Assignment

Assignment

TIME: 1,5 hours TOTAL: 70 marks

Assignment

Instructions

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Show ALL calculations, diagrams, graphs, etc. which you have used in determining your answers.
3. An approved scientific calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
4. If necessary, answers should be rounded off to TWO decimal places, unless stated otherwise.
5. Number your questions correctly according to the numbering system used in this question paper.
6. Diagrams are NOT necessarily drawn to scale.
7. It is in your own interest to write LEGIBLY and to present your work neatly.

Question 1

The distance from Cape Town to Johannesburg is 1 580 km.

1.1.1 Write down the distance in metres. (1)

1.1.2 If a motorist travels at 110 km/h, determine the time he takes in hours and minutes. (4)

1.1.3 If the motorist arrives in Johannesburg at 17:15, at what time did he leave Cape Town? (2)

1.1.4 If the car uses on average 1 litre of petrol for every 12,5 km. Calculate how many litres of petrol will be used for the trip. (3)

1.2 The following set of numbers show marks obtained by 12 Mathematical Literacy learners. A represents the lowest mark.

68; **A**; 55; 59; 65; 54; 75; 64; **B**; 80; 77; 73.

1.2.1 If the range for the marks is 30 determine the value of A. (2)

1.2.2 Given the mean for the data is 63, determine the value of B. (3)

1.2.3 Arrange the data in ascending order and determine the median. (3)

1.2.4 Determine the upper quartile. (2)

[20]

Question 2

The following is a bank statement for Mpho.

Standard Bank
Main road
Claremont
Bank Statement: 30 June 2020
Account number: 62356344487

Transaction details	**Debits (R)**	**Credits (R)**	**Date**	**Balance (R)**
Balance brought forward			01 May	–2 560
Payment Telkom	–300			**A**
Payment CVR	**B**		3 May	–3 120
ATM deposit		500	9 May	**C**
Salary		12 800	15 May	**D**
Autobank Withdrawal	–700		15 May	**E**

2.1 Explain the meaning of debit. (2)

2.2 What is the meaning of having a negative balance brought forward. (–2 560) (2)

2.3 Where is the branch of this bank? (1)

2.4 Determine the values of A, B, C, D and E. (10)

[15]

Assignment

Question 3

Linda is a 57-year-old lady, married with three children. She earns a basic monthly salary of R35 000. She contributes to a medical aid fund for herself and her family.

Use the tax table below to answer the following questions.

2021 tax year (1 March 2020 – 28 February 2021)

Taxable income (R)	Rates of tax (R)
1 – 205 900	18% of taxable income
205 901 – 321 600	37 062 + 26% of taxable income above 205 900
321 601 – 445 100	67 144 + 31% of taxable income above 321 600
445 101 – 584 200	105 429 + 36% of taxable income above 445 100
584 201 – 744 800	155 505 + 39% of taxable income above 584 200
744 801 – 1 577 300	218 139 + 41% of taxable income above 744 800
1 577 301 and above	559 464 + 45% of taxable income above 1 577 300

Tax Rebates

Tax Rebate	2021
Primary	R14 958
Secondary (65 and older)	R8 199
Tertiary (75 and older)	R2 736

Medical Aid Tax Credits per month

Main Member	R310
First dependant	R310
Each additional dependant	R209

3.1 Determine how the amount of R67 144 in the tax table was calculated. (3)

3.2 Determine Linda's annual taxable income. (2)

3.3 Calculate Linda's annual medical credits. (3)

3.4 Determine Linda's monthly income tax for the year 2021. (10)

[18]

Question 4

The following tables show municipal residential water and sanitation tariffs for domestic users.

Residential Water Tariffs (Domestic Full and Domestic Cluster)	
Water Steps (1 kl = 1 000 litres)	**Year 2020/2021 Rands (Inc VAT)**
Step 1 (0 ≤ 6 kl)	R17,92 (free for indigent households)
Step 2 (> 6 ≤ 10,5 kl)	R25,49 (free for indigent households)
Step 3 (> 10,5 ≤ 35 kl)	R36,19
Step 4 (> 35 kl)	R79,46

Residential Sanitation Tariffs (Domestic Full and Domestic Cluster)	
Water Steps (1 kl = 1 000 litres)	**Year 2020/2021 Rands (Inc VAT)**
Step 1 (0 ≤ 4,2 kl)	R15,74 (free for indigent households)
Step 2 (> 4,2 ≤ 7,35 kl)	R22,40 (free for indigent households)
Step 3 (> 7,35 ≤ 24,5 kl)	R33,52
Step 4 (> 24,5 ≤ 35 kl)	R60,32

- Sanitation is charged up to a maximum of 35 kl.
- Domestic Full = Standalone houses.
- Domestic Cluster = Flats, sectional title units, cluster developments and gated villages.

4.1 Mr Willy is under the free indigent household. Calculate his water bill for the month of September if he uses 35 kl of water (5)

4.2 Mr Gordon is not under the indigent households. Calculate his sanitation bill if he uses 25 kl. (5)

4.3 The sanitation bill for Mr Gordon is VAT inclusive, calculate his bill before VAT was added. (3)

4.4 Mr Cleo, who is also not under the indigent households, made a payment of R580 towards his sanitation tariff. Determine how many litres of water he used for that month. (4)

[17]

TOTAL: 70

Assignment Memorandum

Assignment Memorandum

Question 1

1.1.1 Distance in metres: 1 580 000 m ✓ (1)

1.1.2 Time taken = $\frac{1\,580}{110}$ = 14,36363636 hours ✓✓

= 15 hours + 0,36363636 × 60 ✓

= 14 hours 22 minutes ✓ (4)

1.1.3 Time of departure: 17:15 – 14:22 ✓

= 02:53 ✓ (2)

1.1.4 Litres of petrol used = $\frac{1\,580}{12{,}5}$ = 126,4 litres ✓✓✓ (3)

1.2.1 Range = maximum – minimum

30 = 80 – A ✓

A = 80 – 30

A = 50 ✓ (2)

1.2.2 $\frac{68 + 50 + 55 + 59 + 65 + 54 + 75 + 64 + 80 + 77 + 73 + B}{12}$ = 63 ✓

$\frac{700 + B}{12}$ = 63

700 + B = 756

B = 756 – 700 ✓

B = 56 ✓ (3)

1.2.3 50; 54; 55; 56; 59; 64; 65; 68; 73; 75; 77; 80. ✓

median = $\frac{64 + 65}{2}$ = 64,5 ✓✓ (3)

1.2.4 Upper quartile = $\frac{73 + 75}{2}$ = 74 ✓✓ (2)

[20]

Question 2

2.1 Debit means an amount which is withdrawn from the account. ✓✓ (2)

2.2 A negative balance brought forward means that the account has been overdrawn with that amount. ✓✓

2.3 Claremont✓ (1)

2.4 A = –2 560 – 300 = –R2 860 ✓✓ (2)

B = –2 860 – (–3 120) = –R260 ✓✓ (2)

C = –3 120 + 500 = –R2 620 ✓✓ (2)

D = –3 120 + 500 + 12 800 = R10 180 ✓✓ (2)

E = 10 180 – 700 = R9 480 ✓✓ (2)

[15]

Question 3

3.1 27 062 + 26%(321 600 – 205 901) ✓✓
= R67 143,74
≈ R67 144 ✓ (3)

3.2 Annual taxable income: 25 000 × 12 = R420 000 ✓✓ (2)

3.3 Annual Medical credits = (310 + 310 + 209 × 3) ✓
= 1 247 × 12 ✓
= R14 964 ✓ (3)

3.4 Tax payable = 67 144 + 0,21(420 000 – 321 601) ✓✓
= R97 647,69 ✓
Net tax payable = 97 647,69 – 15 714 – 14 964 ✓✓✓
= R68 317,69 ✓
Monthly tax = $\frac{68\ 317,69}{12}$ = R5 693,14 ✓✓✓ (10)

[18]

Question 4

4.1

Water steps (1 kl = 1 000 litres)	Water consumed	Amount due
Step 1 (0 ≤ 6 kl)	4 kl	R0,00 ✓
Step 2 (> 6 ≤ 10,5 kl)	4.5 kl	R0,00 ✓
Step 3 (> 10,5 ≤ 35 kl)	24 kl ✓	14 × R36,19 = R868,56 ✓
	Total amount due	**R868,56** ✓

(5)

4.2

Water steps (1 kl = 1 000 litres)	Amount Used	Amount
Step 1 (0 ≤ 4,2 kl)	4,2 kl	4,2 × R15,74 = R66,11 ✓
Step 2 (> 4,2 ≤ 7,35 kl)	3,15 kl	3,15 × R22,4 = R70,56 ✓
Step 3 (> 7,35 ≤ 24,5 kl)	17,15 kl	17,15 × R33,52 = R574,87 ✓
Step 4 (> 24,5 ≤35 kl)	0,5 kl	0,5 × R60,32 = R30,16 ✓
	Total bill	**R741,70** ✓

(5)

4.3 Bill before VAT = $\frac{100}{115}$ × 741,70 ✓✓
= R644,96 ✓ (3)

4.4 580 – 66,11 = R513,89 4,2 kl ✓
513,89 – 70,56 = R443,33 3,15 kl ✓
443,33 ÷ 33,52 = 13,23 kl✓
Total kilolitres = 4,2 – 3,15 + 13,23
= 10,5 kl ✓ (4)

[17]

TOTAL: 70

Exemplar Assessments

Control Test (Term 2)

TIME: 2 hours TOTAL: 100

Control Test (Term 2)

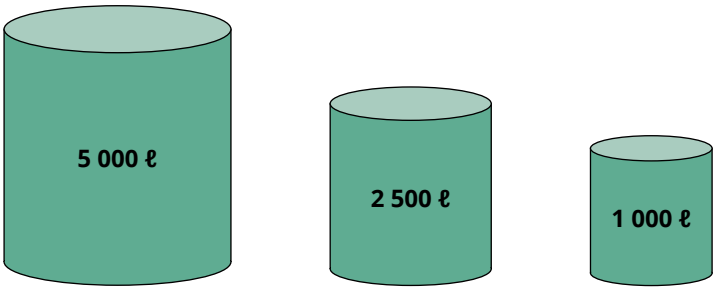
Question 1

A Municipality buys Jojo tanks to harvest rainwater. The tanks will be supplied to 84 272 households.

1 000-litre tanks cost R1 922, 00

2 500-litre tanks cost R3 089, 50

5 000-litre tanks cost R5 993, 00



1 000 cm³ = 1 litre

1.1 Determine the total cost if the Municipality supplies 2 500-litre tanks to all the households. (3)

1.2 Calculate the difference in the expenditure between buying 5000-litre tanks and 1 000-litre tanks for all the households. (6)

1.3 Write down the ratio in its simplest form of the capacity of the three tanks. (2)

1.4 The price of the water tanks is VAT- inclusive. Calculate the VAT amount when buying 2 500-litre tanks for the 84 272 households. [VAT is 15%]. (6)

1.5 Given that a household consumes 144 000 cm³ of water a day. Calculate the number of days it will take for the household to consume all the water in a 2 500-litre tank. Round off your answer to the nearest whole number. (4)

1.6 The manufacturer predicts a price increase of about 3,3 %. Calculate the new price of a 5 000-litre tank. (3)

[24]

Question 2

An entrepreneur bakes and sells scones. The recipe for baking scones is given below.

She uses the following ingredients to make 12 scones:

- $2\frac{1}{2}$ cups flour
- $\frac{1}{3}$ cup sugar ($\frac{1}{2}$ for sweeter scones)
- 1 tablespoon baking powder
- $\frac{1}{2}$ teaspoon salt
- 8 tablespoons butter
- $\frac{2}{3}$ cup milk

1 teaspoon = 5 ml
1 tablespoon = 15 ml
1 cup = 250 ml
1 inch = 2,54 cm

Method:

Mix the dry ingredients in a large bowl. Add butter and mix until crumbs are formed. Add milk. Place the dough on a floured counter. Pat and roll into a circle of $1\frac{1}{2}$ inches thick. Cut into 12 squares. Place on a greased tray and bake for 12 minutes.

Control Test (Term 2)

2.1 Determine:

2.1.1 how much flour, in ml, is needed to bake 36 scones (3)

2.1.2 the thickness of the dough, in cm. (2)

2.2 Calculate how much sugar, in ml, is needed to make 12 sweeter scones. (2)

2.3 To bake 48 scones determine:

2.3.1 the number of teaspoons of salt required (2)

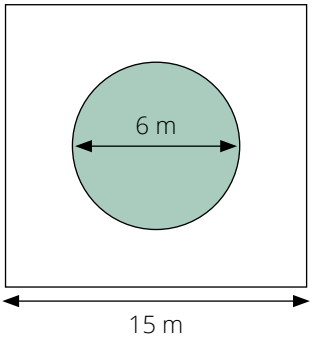
2.3.2 how much butter, in ml, is needed. (2)

2.4 Given that it took 1 hour 40 minutes to make the scones and that she finished at 09:15, determine the time she started baking. (2)

[13]

Question 3

The picture below shows a braai area with a circular pool. The braai area is a square with length 15 m.



3.1 Determine the area of the pool. (3)

Area of a circle = πr^2, where π = 3,142

3.2 The area surrounding the swimming pool is to be paved. Determine the area to be paved.

Area = length × width (3)

3.3 The paving bricks are sold in pallets of 1 000 bricks.

- each pallet costs R3 500
- 48 bricks cover a square metre

Calculate the cost of paving the braai area with bricks. (6)

3.4 The truck delivering the bricks uses 1,17 litres of fuel per km.

3.4.1 Given that it travels 76 km, calculate the number of litres used to deliver the bricks. (2)

3.4.2 If the truck travels at a speed of 40 km/h, find the time taken, in hours and minutes, to travel the 76 km.

Distance = Speed × time (3)

[17]

Control Test (Term 2)

Question 4

4. Jim is a 43-year old manager who earns R370 000 per annum. He contributes to a medical aid fund for himself, his wife and their two children. Use Annexure B to answer the following questions.

4.1 Determine his total medical credit per year. (3)

4.2 He contributes R4 380 income tax per month and has been complaining that he is being overtaxed. Use the necessary calculations to prove whether his complaint is valid or not. (8)

[11]

Question 5

5. The route map of the Medihelp Stellenbosch Cycle Tour is shown in ANNEXURE A.

Use ANNEXURE A to answer the questions that follow.

5.1 Write down the name of the first town that the cyclists will reach once they have started the race? (2)

5.2 If they started the race at 09:00 and the cut-off time to finish the race is 13:30, how much time do they have to finish the race? (2)

5.3 Write down the general direction that Wellington is from Stellenbosch? (2)

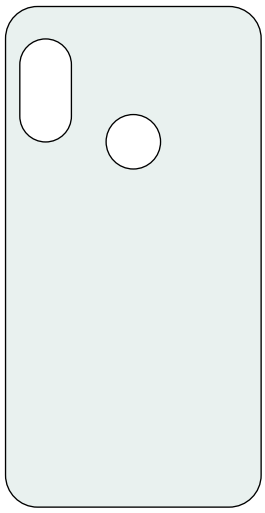
5.4 How many water points are available on the route? (2)

5.5 Name the mountain pass that is situated on the route. (2)

[10]

Question 6

6.1 A High School decides to sell cellphone protectors with the school's badge and the person's name on it. Some of the profit will be used to establish a new computer laboratory.



A cellphone protector

- The production cost for the personalised cellphone protectors is given by the following formula:
- Production cost of the cellphone protectors = R3 000 + (R40 × number of cellphone protectors)
- The personalised cellphone protectors will be sold for R90,00 per protector.

Control Test (Term 2)

TABLE 1: Production cost and income for selling cellphone protectors

Number of cellphone protectors	0	100	300	500	800
Production cost (R)	3 000	7 000	15 000	23 000	**B**
Income (R)	0	9 000	**A**	45 000	72 000

6.1.1 Use TABLE 1 to calculate the missing values A and B. (4)

6.1.2 The graph on ANSWER SHEET 1 shows the total income for selling the cellphone protectors. On the same set of axes, draw another line graph that represents the production cost for manufacturing the cellphone protectors. (4)

6.2 TABLE 6 below shows the comparative sales statistics of a range of vehicles per category, as well as the sales for extra heavy commercial vehicles (XHV) for June 2020, per make.

TABLE 2

MARKET AT A GLANCE							
Market	**Jun 2020**	**May 2020**	**DIFF May–Jun**	**% DIFF May–Jun**	**Jun 2019**	**DIFF 2019–2020**	**% DIFF 2019–2020**
PAS	19 264	8 966	10 298	114,9	28 931	–9 667	–33,4
LCV	10 189	3 071	7 118	231,8	14 497	–4 308	–29,7
MCV	611	303	308	101,7	832	–221	–26,6
HCV	454	86	368	427,9	472	–18	–3,8
XHV	1 280	414	866	209,2	1 147	133	11,6
BUS	69	34	35	102,9	74	–5	–6,8
TOTAL	**31 867**	**12 874**	**18 993**	**147,5**	**45 953**	**–14 086**	**–30,7**

NOTE: DIFF = Difference

KEY: MARKET VEHICLES	
PAS	PASSENGER
LCV	LIGHT COMMERCIAL
MCV	MEDIUM COMMERCIAL
HCV	HEAVY COMMERCIAL
XHV	EXTRA HEAVY COMMERCIAL
BUS	BUSES

Sales of Extra Heavy Commercial – June 2020			
Make	Sales	Make	Sales
DAF	27	SCANIA	182
FAW	93	DAEWOO	5
ISUZU	48	TATA TRUCK & BUS	9
IVECO	26	HINO	31
MAN	157	EICHER	2
VOLKSWAGEN	0	UD TRUCKS	115
MERCEDES	239	VOLVO TRUCKS	288
POWERSTAR	58		
TOTAL			**1 280**

6.2.1 Use TABLE 2 to explain why the data is classified as numerical data. (2)

6.2.2 Show how –29,7%, the percentage difference for Light Commercial Vehicles (LCV) from June 2019 to June 2020, was calculated. (4)

6.2.3 Use ANSWER SHEET 2 to complete the frequency table that shows the ranges of sales of Extra Heavy Commercial vehicles (XHV) for June 2020 in the table. (6)

6.3 Study ANNEXURE C, a Covid-19 Self-Declaration for entry into the workplace questionnaire. Identify and explain ONE unnecessary inclusion on the questionnaire. (2)

6.4 The main engine crankshaft of a Volvo FX 380 HP truck was not available in South Africa, so he had to import the part from Sweden. The price of the part as shown on the internet is 40 329,21 Kr (Swedish Krona). Calculate the total cost in rands to get the part to South Africa if import tax and postage cost amount to R1 250 and must still be added.

1 Swedish Krona = R1,84

(3)

TOTAL: 100

ANNEXURE B

Question 4

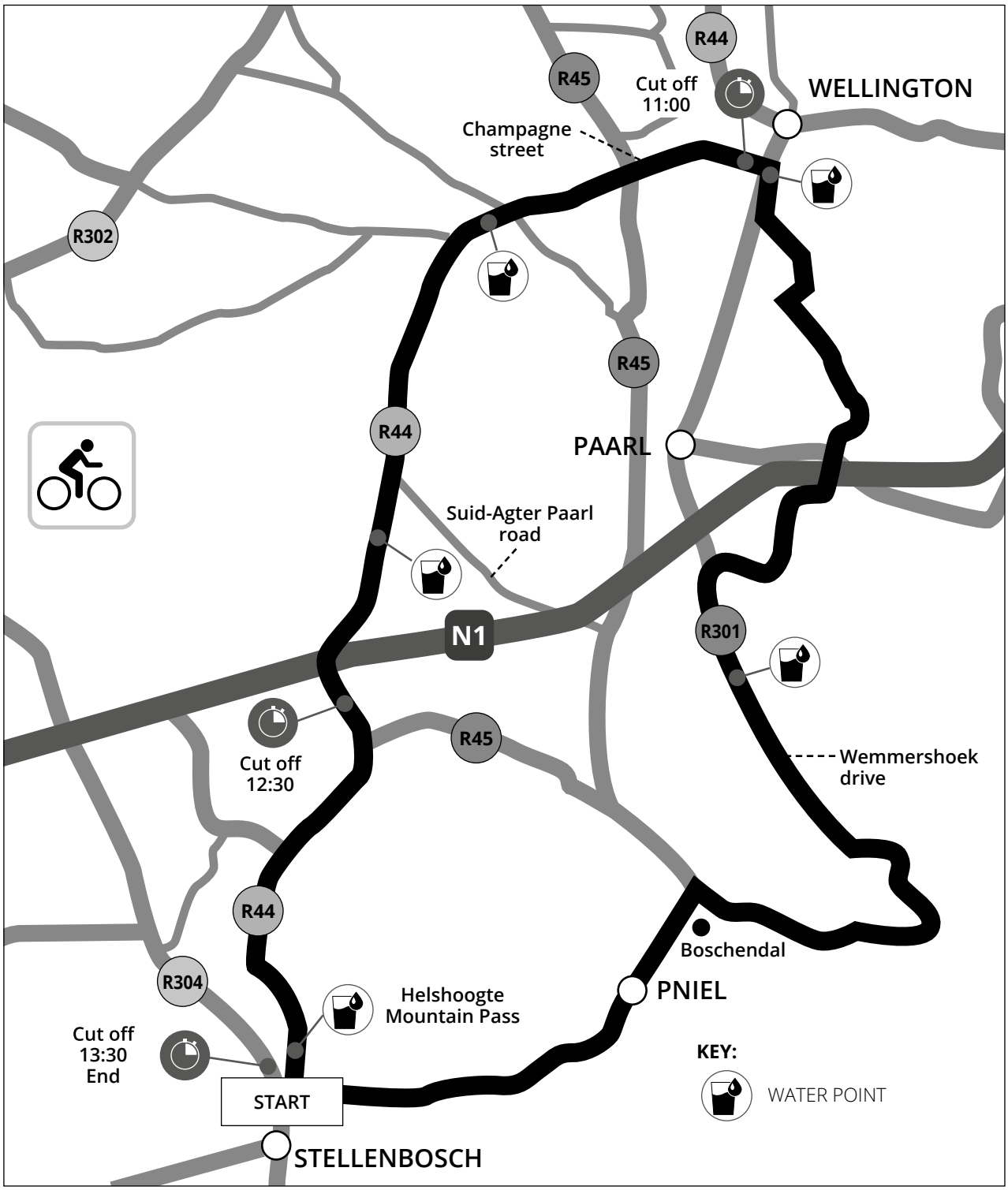
TAX TABLE FOR INDIVIDUALS FOR THE TAX YEAR: MARCH 2019 – FEBRUARY 2020	
Taxable income in ZAR	**Tax rate in ZAR**
0–195 850	18% of taxable income
195 851–305 850	35 253 + 26% of taxable income above 195 850
305 851–423 300	63 853 + 31% of taxable income above 305 850
423 301–555 600	100 263 + 36% of taxable income above 423 300
555 601–708 310	147 891 + 39% of taxable income above 555 600
708 311–1 500 000	207 448 + 41% of taxable income above 708 310
1 500 001 and above	532 041 + 45% of taxable income above 1 500 000
Tax rebates	**Amount in ZAR**
Primary (age below 65)	R14 067
Secondary (age 65 to 74)	R7 713
Tertiary (age 75 and over)	R2 574
Tax rebates	**Amount in ZAR**
Primary (age below 65)	R79 000
Secondary (age 65 to 74)	R122 000
Tertiary (age 75 and over)	R136 750
Monthly medical credits in ZAR	
Main member	R319
First dependant	R310
Each additional dependant	R290

Control Test (Term 2)

ANNEXURE A

Question 1.4

MEDIHELP STELLENBOSCH CYCLE TOUR ROUTE MAP



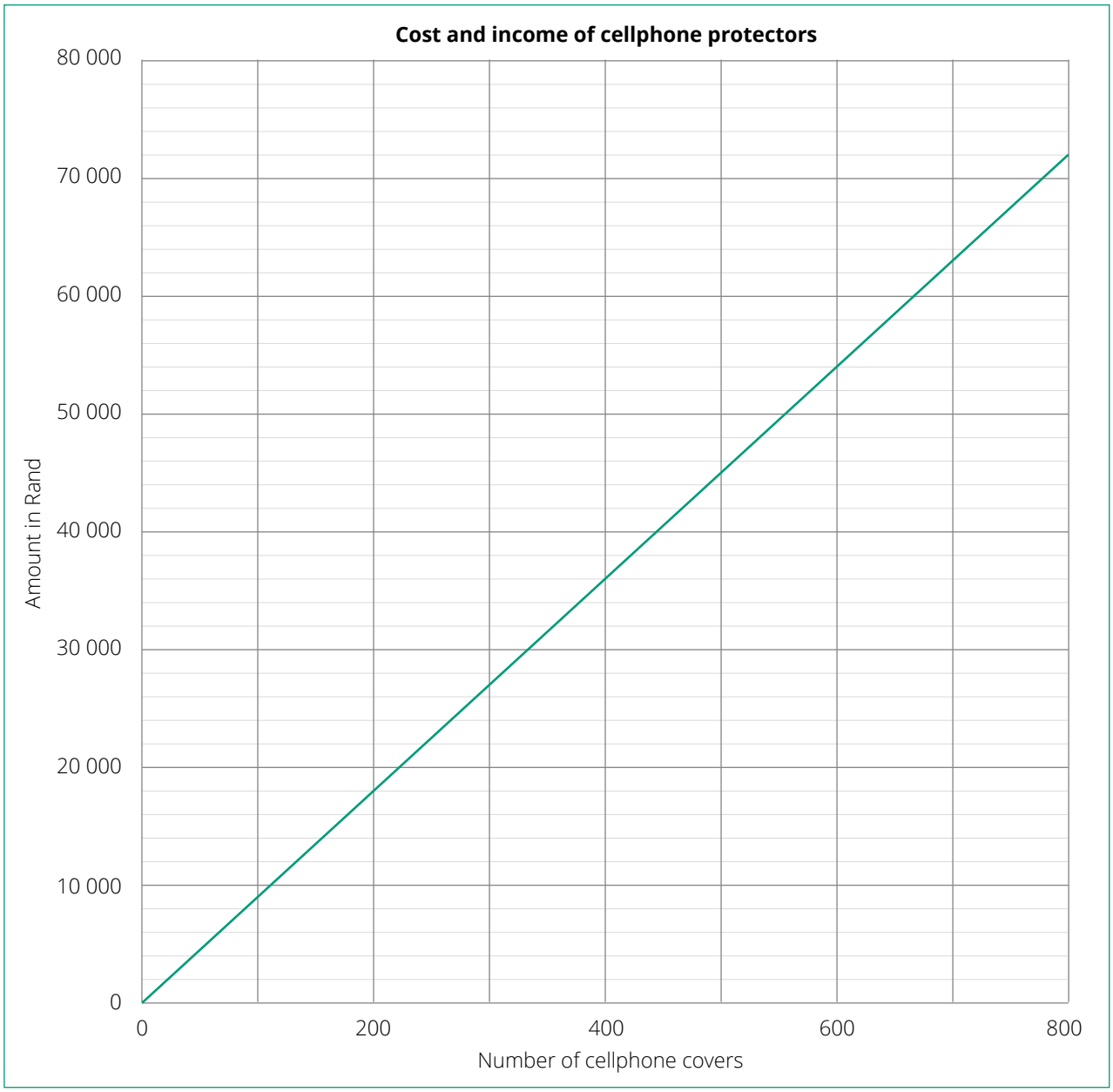
Control Test (Term 2)

ANSWER SHEET 1

Name: **Surname:**

Grade:

Question 3.1.2



Control Test (Term 2)

ANSWER SHEET 2

Name: Surname:

Grade:

Question 6.2.3

FREQUENCY TABLE (EXTRA HEAVY COMMERCIAL VEHICLES)

Ranges of sales of different makes	Tallies	Frequency	Cumulative frequency
251 - 300	I	1	15
	I	1	14
	II	2	
101 – 150	I	1	11
51 – 100	II		10
0 – 50		8	

ANNEXURE C

Question 6.3

Covid-19 Self-Declaration for entry into Atlang Suites			
Access of the workplace is subject to completion of this document			
Name and Surname			
Contact number			
Address			
Reason for visiting			
Name and contact of person being visited.			
1. Have you travelled internationally in the last 14 days?		☐ Yes	☐ No
2. Have you been in close contact with someone who tested positive for Covid-19 in the last 14 days?		☐ Yes	☐ No
3. Do you currently have or recently showed any of the following symptoms?		☐ Yes	☐ No
	Fever	☐ Yes	☐ No
	Dry Cough	☐ Yes	☐ No
	Sore throat	☐ Yes	☐ No
	Body pains/Headache	☐ Yes	☐ No
	Shortness of breath	☐ Yes	☐ No
DECLARATION			
*I _____hereby declare to the best of my knowledge that the information provided above is correct at the time of completion. I further undertake to inform **Atlang Suites**, should I be diagnosed with Covid-19 within the next 14 days to facilitate contact tracing.*			
Date	**Signature**		
Please note that Atlang Suites reserves the right of access to the facility.			

Control Test (Term 2) Memorandum

Control Test (Term 2) Memorandum

Question 1

1.1 Total cost = 84 272 × 3 089,50 ✓✓
= R260 358 344,00 ✓ (3)

1.2 Total cost of 5 000 ℓ-water tanks
= 84 272 × 5 993,00 ✓
= R505 042 096,00 ✓
total cost of 1 000 ℓ-water tanks
= 84 272 × 1922,00 ✓
= R161 970 784 ✓
Difference
= 505 042 096,00 – 161 970 784 ✓
= R343 071 312,00 ✓ (6)

1.3 Ratio: 1 000 : 2 500 : 5 000 = 2 : 5 : 10 ✓✓ (2)

1.4 Total including VAT = 84 272 × 3 089,50 ✓
= R260 358 244,00 ✓
Total excluding VAT = $\frac{260\ 358\ 344}{1{,}15}$ ✓
= R226 398 560 ✓
VAT amount = 260 358 344 – 226 398 560 ✓
= R33 959 784 ✓ (6)

1.5 144 000 ÷ 1 000 = 144 ℓ ✓
Time taken = $\frac{2\ 500}{144}$ ✓
= 17.36 ✓
= 17 days ✓ (4)

1.6 New price of water tank
= $\frac{103{,}3}{100}$ × 5 993,00 ✓✓
= R6 190,77 ✓ (3)

[24]

Question 2

2.1.1 No. of millilitres of flour for 12 scones
= $2\frac{1}{2}$ × 250 ✓
= 625 ml ✓
No. of millilitres of flour for 36 scones
= 625 × 3
= 1 875 ml ✓ (3)

2.1.2 Thickness of the dough in centimetres
= $1\frac{1}{2}$ × 2,54 ✓
= 3,81 cm ✓ (2)

2.2 No. of millilitres of sugar = $\frac{1}{3}$ × 250 ✓
= 83,33 ml ✓ (2)

2.3.1 No. of teaspoons = 0,5 × 4 ✓
= 2 teaspoons ✓ (2)

2.3.2 No. of millilitres of butter:
8 × 15 × 4 = 480 ml ✓✓ (2)

2.4 Time = 09:15 – 01:40 = 07:35 ✓✓ (2)

[13]

Question 3

3.1 Area of swimming pool:
πr^2 = 3,142 × 3^2 ✓✓
= 28,278 m^2 ✓ (3)

3.2 Area = length × width = 15 × 15
= 225 m^2 ✓
Area to be paved = 225 – 28,278
= 196,72 m^2 ✓ (3)

3.3 No. of bricks = 196,72 × 48 ✓
= 9 442,56 ✓
= 9 443 bricks ✓
Number of pallets: 10 ✓
Cost of bricks: 10 × 3 500 = R35 000 ✓✓ (6)

3.4.1 Number of litres = 76 × 1,17
= 88,92 litres. ✓✓ (2)

3.4.2 Time = $\frac{76}{40}$ = 1,9 hours ✓✓
= 1 hour 54 minutes ✓ (3)

[17]

Question 4

4.1 Total medical credits per year:
310 + 210 + 290 + 290 ✓
= R1 200 × 12 ✓
= R14 400 ✓ (3)

4.2 Tax payable
= 63 853 + 0,31(370 000 – 305 850) ✓
= R83 739,50 ✓
Net tax payable
= 83 739,50 – 14 067 – 14 400 ✓✓
= R55 272,50 ✓
Monthly income tax = $\frac{55\ 272{,}50}{12}$
= R4 606,04 ✓✓
His complaint is not valid. ✓ (8)

[11]

Control Test (Term 2) Memorandum

Question 5

5.1 Pniel ✓✓ (2)

5.2 Time to finish race: 13:30 – 09:00 ✓
= 4 hours 30 minutes / 4,5 hours / $4\frac{1}{2}$ hours ✓ (2)

5.3 North East / NE ✓✓ (2)

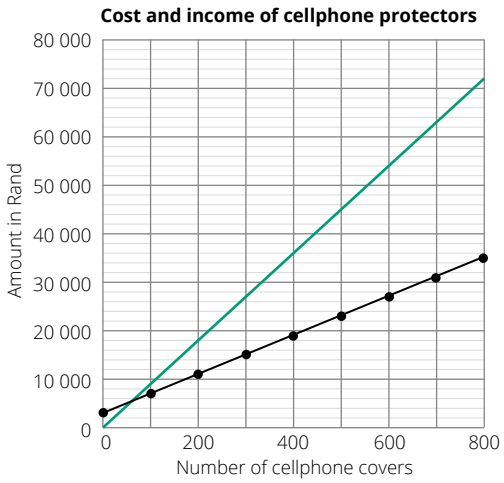
5.4 5 water points ✓✓ (2)

5.5 Helshoogte Mountain Pass ✓✓ (2)

Question 6

6.1.1 A = 3 000 + (40 × 800) ✓
= R35 000 ✓
B = 90 × 300 ✓
= R27 000 ✓ (4)

6.1.2



✓✓✓✓ (4)

6.2.1 Numerical data is information that is something that is measurable. It is always collected in number form, although there are other types of data that can appear in number form. An example of numerical data would be the number of cars/trucks sold, people that attended the movie theater over the course of a month etc. ✓✓ (2)

OR Any acceptable response.

6.2.2 $\frac{4\,308}{14\,497} \times \frac{100}{1}$ ✓✓
= 29,71649% ✓
–29,71649% because the numbers declined year-on-year. ✓ (4)

6.2.3

FREQUENCY TABLE
(EXTRA HEAVY COMMERCIAL VEHICLES)

Ranges of sales of different makes	Tallies	Frequency	Cumulative frequency
251 – 300	|	1	15
201 – 250	|	1	14
151 – 200	||	2	12
101 – 150	|	1	11
51 – 100	||	2	10
0 – 50	𝍸 |||	8	8

✓✓✓✓✓✓ (6)

6.3 It was unnecesary to include Yes or No for the initial question 3. ✓✓ (2)

6.4 40 329,21 × R1,84 ✓
= R74 205,75 + R1250 ✓
= R75 455,75 ✓ (3)

TOTAL: 100

Trial Examination Papers

Trial Examination Paper 1

TIME: 3 hours TOTAL: 150

Trial Examination Paper 1

Name: **Surname:**

Instructions

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the annexures to answer the following questions:
   ANNEXURE A for Question 3.1
   ANNEXURE B for Question 4
3. Number the answers correctly according to the numbering system used in this question paper. Please use ANSWER SHEET 1 for Question 2.3.2.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL the calculations clearly.
7. Round off ALL final answers appropriately to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

Question 1

1.1 The cost price of an infrared thermometer imported from India was R500 in June 2019 and R565 in June 2020.

1.1.1 Explain the term "inflation" within the given context. (2)

1.1.2 What is the difference between the prices, in rands? (2)

1.1.3 Calculate the selling price of an infrared thermometer in July 2020 if there was a 40% mark-up. (2)

1.2 During the Covid-19 crisis in 2020 the South African Rand (ZAR) declined to a record low level compared to some other currencies. Below is a table indicating the exchange rates as on 20 May 2020.

Trial Examination Paper 1

TABLE 1: Exchange rates between South Africa and some other countries

May 20, 2020		
Currency	**Units per ZAR**	**ZAR per unit**
US Dollar	0,055124	18,141002
Euro	0,050319	19,873189
British Pound	0,045000	22,222255
Indian Rupee	4,176797	0,239418
Australian Dollar	0,084102	11,890347
Japanese Yen	5,933915	0,168523

Use TABLE 1 and the information above to answer the questions that follow.

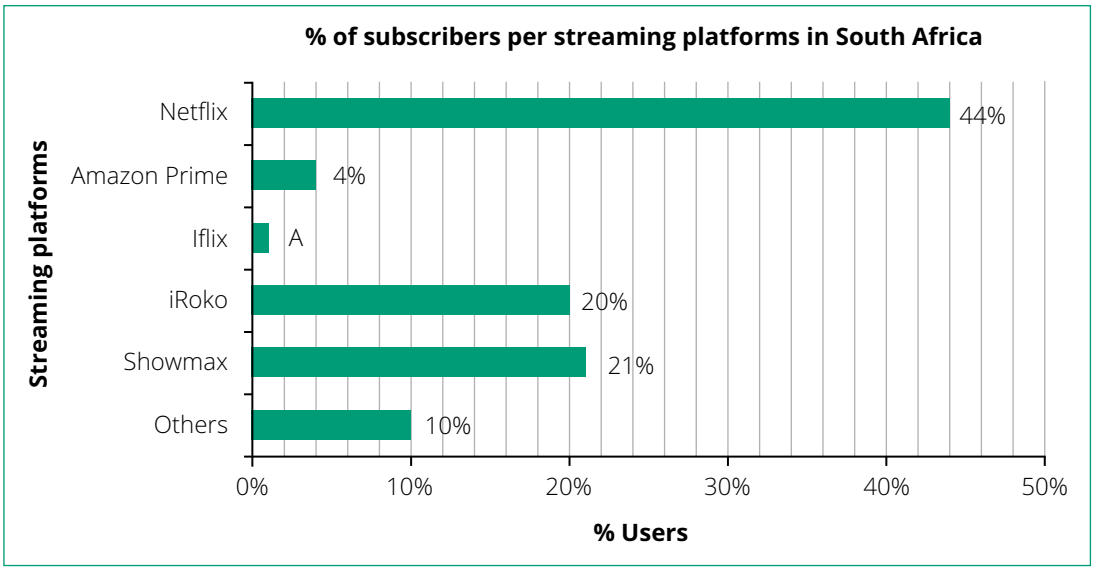
1.2.1 On what date were the exchange rates recorded? (2)

1.2.2 How many South African rands (ZAR) are equivalent to 1 British Pound? (2)

1.2.3 What is the name of the currency used in Japan? (2)

1.3 With faster internet being easily accessible for the public in South Africa, there has been a drastic increase in subscribers to streaming services.

The graph below shows the distribution of subscribers to streaming services in South Africa.



1.3.1 Write down the most popular streaming platform in South Africa? (2)

1.3.2 Calculate the percentage of people subscribing to Iflix as represented by A. (2)

1.3.3 Rank the streaming platforms in descending order. (2)

1.3.4 What type of graph was used to illustrate the data? (2)

[20]

Question 2

2.1 Below is an extract of a bank statement for Solly Sibeko. Study the bank statement and answer questions that follow.

MAGIC BANK			
Customer Name	Solly Sibeko	**Statement Date**	June
Address	13 Mdu Road Langa	**Account No**	****0048
Transaction Date	**Transaction Details**	**Amount (R)**	**Account Balance (R)**
5-Jun	Opening Balance		9 872,50
	Debit Card Purchase	1 516,72	8 355,78
	Transaction fee	1,50	8 354,28
6-Jun	Stop Order	3 600,00	4 754,28
	Transaction Fee	6,00	4 748,28
	Debit Order Cell phone contract	289,93	4 458,96
	Transaction Fee	6,00	4 452,96
9-Jun	Debit order car Insurance	**A**	3 800,96
	Transaction fee	6,00	3 794,96
12-Jun	ATM withdrawal	1 000,00	2 794,96
	Transaction fee	6,00	2 788,96
13-Jun	ATM withdrawal	880,00	1 908,96
	Transaction fee	6,00	1 902,96
15-Jun	Cash deposit at Branch	325,00	2 227,96
	Transaction fee	**B**	2 222,37
25-Jun	Electronic Deposit - Salary	17 675,90	19 898,27
28-Jun	Monthly account fee	8,20	19 890,07
		Final Balance	R19 890,07

Account balance	Interest rate (% per annum)
R1 – R4999,99	1,20%
R5 000 – R9 999,99	1,50%
R10 000 +	1,80%

Use the information above to answer the questions that follow:

2.1.1 Define the term "transaction fee". (2)

2.1.2 Calculate the value of A. (3)

2.1.3 Calculate Solly's annual net salary (3)

2.1.4 Is the final balance in the account a credit or a debit balance? Explain your answer. (2)

2.1.5 Solly has a cell phone contract with a subscription fee of R85,00 per month. How much extra did he spend on his cell phone in June? (2)

2.1.6 Assume that no further transactions are done on the final balance. Calculate the interest rate that Solly will receive from the bank in June. (3)

Trial Examination Paper 1

2.1.7 Magic Bank uses the following formula to calculate the transaction fee if the money is deposited at the branch ATM:

Transaction fee = R2,50 + 0,95% of the amount deposited

Use the formula above to calculate the transaction fee of 15 June.

Round your answer to 2 decimal places. (3)

2.1.8 Calculate the total transaction fees that Solly paid in the month of June? (3)

2.2 Solly and his wife, Queen, are about to buy their first house through Magic Bank.

The property (house) they are interested in costs R580 440,00 (inclusive of transfer costs and lawyer fees). Solly and Queen managed to raise a deposit of 25%.

Magic Bank granted them a home loan at 10,75% interest for the balance of the loan over a period of 30 years.

TABLE 2: Bond repayment factors

Interest %	Years			
	15	20	25	30
9,75%	10,59	9,49	8,91	8,59
10,00%	10,75	9,65	9,09	8,78
10,25%	10,90	9,82	9,26	8,96
10,50%	11,05	9,98	9,44	9,15
10,75%	11,21	10,15	9,62	9,33
11,00%	11,37	10,32	9,80	9,52
11,25%	11,52	11,52	9,98	9,71

Use TABLE 2 and the information above to answer the questions that follow:

2.2.1 Explain the term "home loan". (2)

2.2.2 How long will they take to pay back the bank if the bond repayment factor is 10,15 and the interest rate is 10,75%? (2)

2.2.3 Calculate the amount that Magic Bank loaned to Solly and Queen. (4)

2.2.4 Calculate the monthly repayment amount that Solly must pay on the loaned bond.

Use the formula below and the table above:

$$\text{Monthly repayment} = \frac{\text{bond amount}}{1\,000} \times \text{bond repayment factor}$$

(4)

2.2.5 Calculate the total amount that they will have paid at the end of the loan term. (2)

2.3 Solly starts a new job but he does not have his own computer. He decides to buy a new cell phone with unlimited web-browsing. The table below illustrates the cost of three different deals from a cell phone company.

DEAL	Phone and internet costs	Call costs
DEAL 1	R8 000 cash for the phone R150 per month for internet	R2,50 per minute
DEAL 2	R250 per month over 24 months including internet and phone	50 free minutes R2,00 per minutes for calls after free minutes used
DEAL 3	R400 per month over 24 months including internet and phone	50 free minutes R1,50 per minute for calls after free minutes used.

The graph for DEAL 2 is given in ANSWER SHEET 1.

The following table indicates the cost of the different deals for a certain amount of minutes per month.

TABLE 3: The total cost for three different deals from a cell phone company

DEAL	Minutes								
	0	**25**	**50**	**75**	**100**	**125**	**150**	**175**	**200**
COST FOR DEAL 1 (R)	150	212,50	275	337,50	400	462,50	525	587,50	650
COST FOR DEAL 2 (R)	250	250	250	300	350	400	450	500	550
COST FOR DEAL 3 (R)	400	400	400	437,50	475	512,50	550	587,50	625

Use TABLE 3 and the information above to answer the questions:

2.3.1 How much will Solly pay in cash for the phone if he chooses DEAL 1? (2)

2.3.2 Use the values in TABLE 3 and draw line graphs for DEAL 1 and DEAL 3 on the same set of axes on ANSWER SHEET 1. (6)

[43]

Question 3

3.1 Andrew is 58 years old and works for a big company. His gross monthly income is R44 690. The following deductions are deducted from his salary monthly:

- Pension: R2 687
- Medical Aid: R3 950
- Labour Union fees: R80
- Income Tax:

The pension fund contribution is non-taxable.

ANNEXURE A shows the annual Tax tables for 2018/2019. Use ANNEXURE A to answer the following questions:

3.1.1 Andrew is married and has one child. They are all on his medical aid. Calculate Andrew's annual medical aid credits. (3)

Trial Examination Paper 1

3.1.2 Calculate Andrew's annual taxable income (3)

3.1.3 Calculate the monthly income tax that Andrew will pay after rebates. (7)

3.2 James and Andrew decide to host a dinner in order raise money to go and watch the Formula One Grand Prix in Italy. They budget for an income of R25 000.

The cost of the dinner is as follows:

- R100 per person
- If a couple buys two tickets, they receive 10% discount on their total price.

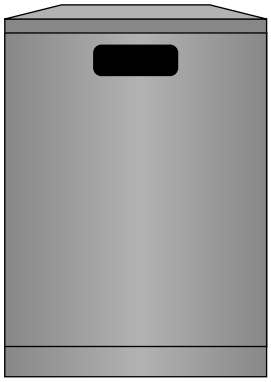
There were 86 couples and 102 single people who attended the dinner. Verify, showing all calculations, whether they reached their budgeted amount. (5)

3.3 Due to Covid-19, James and Andrew decide to postpone their Formula One visit to 2022.

A ticket would have been $455 in 2020. Calculate the projected ticket price in two years' time if the projected inflation rate is 3,7% in 2021 and 2,8% in 2022. (4)

3.4 TABLE 3 below shows the price and Hire Purchase options of a Defy Dishwasher as advertised by two companies.

TABLE 3: Comparison of prices of a dishwasher at two companies:

	COMPANY A	COMPANY B
DEFY DDW356 Metallic cornerwash dishwasher 	R7 999,00 CASH PRICE Deposit: R799,90 Monthly Instalment: R423,65 Contract Term: 30 Months Service Fee: R69,00 Initiation Fee: R633,32 Credit Life Insurance: R637,50	R7 599,00 CASH PRICE Deposit: R760,00 Monthly Instalment: R370,00 Contract Term: 36 Months Additional costs: R1 599,00
NOTE: Water temperature needs to be between 140 and 145 degrees Fahrenheit to sanitise the dishes.		

3.4.1 The total cost of buying the dishwasher on Hire Purchase at Company A is R14 849,22. Use TABLE 3 to calculate the difference in the total Hire Purchase cost of the dishwasher between Company A and Company B. (5)

3.4.2 A customer opted for the Hire Purchase option of Company B but could only afford to pay R185,00 as an instalment for May and June. The company adds 30% interest per month on instalments in arrears. TABLE 4 below shows what was paid without the interest included. Use TABLE 4 to calculate the instalment for July if he needs to pay the outstanding balance as well as additional compound interest that was accumulated. Show all calculations.

TABLE 4: Summary of payments on Hire Purchase (HP)

	April	May	June	July
Instalment paid	R370,00	R185,00	R185,00	
Arrears	R0,00	R185,00		
Interest of 30% added				

Note: Arrears are the outstanding amounts on the full instalment. (5)

[30]

Question 4

4 ANNEXURE B shows a bar graph of the internet access of households per province as a percentage in 2017. The internet access at home or anywhere is shown. The table shows the number of households per province in thousands for the years 2016, 2017 and 2018.

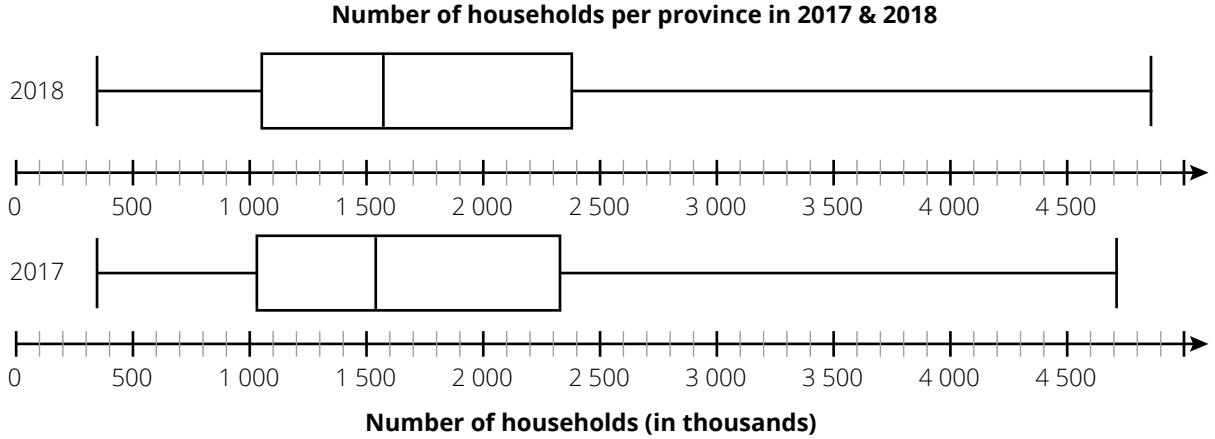
Use the graph along with the table in ANNEXURE B to answer the questions that follow:

4.1 Determine the range of the number of households of the provinces in 2016. (3)

4.2 Determine the province that was the median for the number of households in 2018. Show all the necessary steps. (2)

4.3 John argues that the number of households that had internet access at home in the Western Cape (WC) in 2017 was more than that of Gauteng for the same year. He bases his argument on the fact that the percentage household of Western Cape (WC) with internet access at home was more than that of Gauteng (GP). Verify, showing all calculations, that ohn's statement is valid. (6)

4.4 Use the box-and-whisker plots below and the table in ANNEXURE B showing the number of households per province, to answer the questions that follow:



a) The Inter-Quartile Range (IQR) of the number of households per province in 2018 is 1 340,5. Calculate the IQR of 2017 and compare it with the IQR of 2018. (5)

b) Which province's number of households, in comparison to the rest of the provinces' number of households, can be regarded as an outlier? Provide a reason for your answer. (3)

Trial Examination Paper 1

4.5 Determine the probability (as a percentage), of randomly selecting a household in 2017 in South Africa that does not have access to internet at home. (2)

[21]

Question 5

5.1 Covid-19 (Novel Coronavirus) caused a global pandemic in 2020.

TABLE 4 below shows some information regarding the statistics of this disease.

TABLE 4: Countries, territories or areas with reported, laboratory confirmed Covid-19 cases and deaths. Data as on 9 June 2020.

Reporting Country / Territory / Area	Total Confirmed Cases	Total Confirmed new cases	Total deaths	Total Population size (in millions)
China	84 638	4	4 645	1 386
Australia	7 265	5	102	24,6
Italy	235 278	280	**A**	60,48
Spain	241 717	167	27 136	46,66
United States of America	1 933 560	17 848	110 220	327,2
Canada	95 699	642	7 800	37,59
South Africa	50 879	2 594	1 080	56,72
Burkina Faso	890	2	53	19,19

Use the information in TABLE 4 to answer the questions that follow.

5.1.1 Would this data be classified as discrete or continuous? (2)

5.1.2 Write down the highest number of confirmed cases. (2)

5.1.3 If 14,44 % of Italy's total confirmed cases resulted in death, calculate the total number of deaths for Italy as indicated by A in the table. (2)

5.1.4 Arrange the countries in ascending order according to the total deaths. (2)

5.1.5 Calculate the percentage of Spain's total population that was reported as confirmed cases. (3)

5.1.6 Determine the mean number of cases reported by these countries (listed in the table above) if they reported a total of 2 649 656 cases between them. (2)

5.1.7 Determine the probability, as a simplified fraction, of randomly picking a country from this list with more than 1 000 total reported deaths. (3)

5.2 The government also recorded and released data monitoring the number of Covid-19 cases and the number of people who have recovered.

The information for South Africa on 11 August 2020 is shown in ANNEXURE D.

Use the information in TABLE 5 and the graph in ANNEXURE D to answer the questions that follow.

5.2.1 What was the probability of more than 100 000 recoveries being made in KZN by 11 August? (2)

5.2.2 Calculate the range of cases being reported per province in South Africa. (2)

5.2.3 Which province in South Africa had the second lowest number of cases on 11 August? (2)

5.3 Due to the outbreak of the Covid-19 pandemic in South Africa, the country had a nationwide lockdown, where all non-essential services (like take-away restaurants and many other institutions) had to be closed.

Many South Africans purchase take-away food regularly. TABLE 6 below indicates some financial information about certain fast-food restaurants.

TABLE 6: Top fast-food restaurants that make the most money in South Africa (2017)

Brand	Revenue (2017)	Growth (from 2016)	Number of frachises / outlets (2017)	Revenue per outlet (in millions)
McDonalds	R4,34 billion	5,6%	245	R17,7
Burger King	R623,5 million	28,5%	61	R10,2
KFC	R8,71 billion	9,4%	879	**A**
Fish and Chip Co.	R810,8 million	5,7%	164	R4,9
Wimpy	R2,02 billion	7,5%	481	R4,2
Captain DoRegos	R162,7 million	17,6%	41	R4,0
Steers	R1,35 billion	8,9%	561	R2,4

Use the information in TABLE 6 above to answer the questions that follow.

5.3.1 Calculate the missing value A for KFC's revenue per outlet in millions. (3)

5.3.2 Determine the median according to the number of franchises/outlets in 2017. (2)

5.3.3 Identify the brand that had the lowest revenue in 2017. (2)

5.3.4 The correct amount in rands for the total revenue of Fish and Chip Co. and Wimpy combined earned in 2017 would be:

a) R813 000 000 000
b) R2 830 800 000
c) R81 282 000 000 000
d) R2 830 800 000 000 (2)

5.3.5 Determine the probability (as a percentage) of picking one of these brands that had a revenue of less than R1 000 000 000. (3)

5.3.6 Which of these brands had the highest percentage growth in 2017? (2)

[36]

TOTAL: 150 marks

Trial Examination Paper 1

ANNEXURE A

Question 3.1

TAX TABLES
2019 Tax Year (1 March 2018 - 28 February 2019)

Taxable Income (R)	Tax rates (R)
0 – 195 850	18% of taxable income
195 851 – 305 850	35 253 + 26% of taxable income above 195 850
305 851 – 423 300	63 853 + 31% of taxable income above 305 850
423 301 – 555 600	100 263 + 36% of taxable income above 423 300
555 601 – 708 310	147 891 + 39% of taxable income above 555 600
708 311 – 1 500 000	207 448 + 41% of taxable income above 708 310
1 500 001 and above	532 041 + 45% of taxable income above 1 500 000

Tax rebates for individuals

Tax Rebate	
	2019
Primary rebate	R14 067
Secondary rebate (65 and older)	R7 713
Tertiary rebate (75 and older)	R2 574

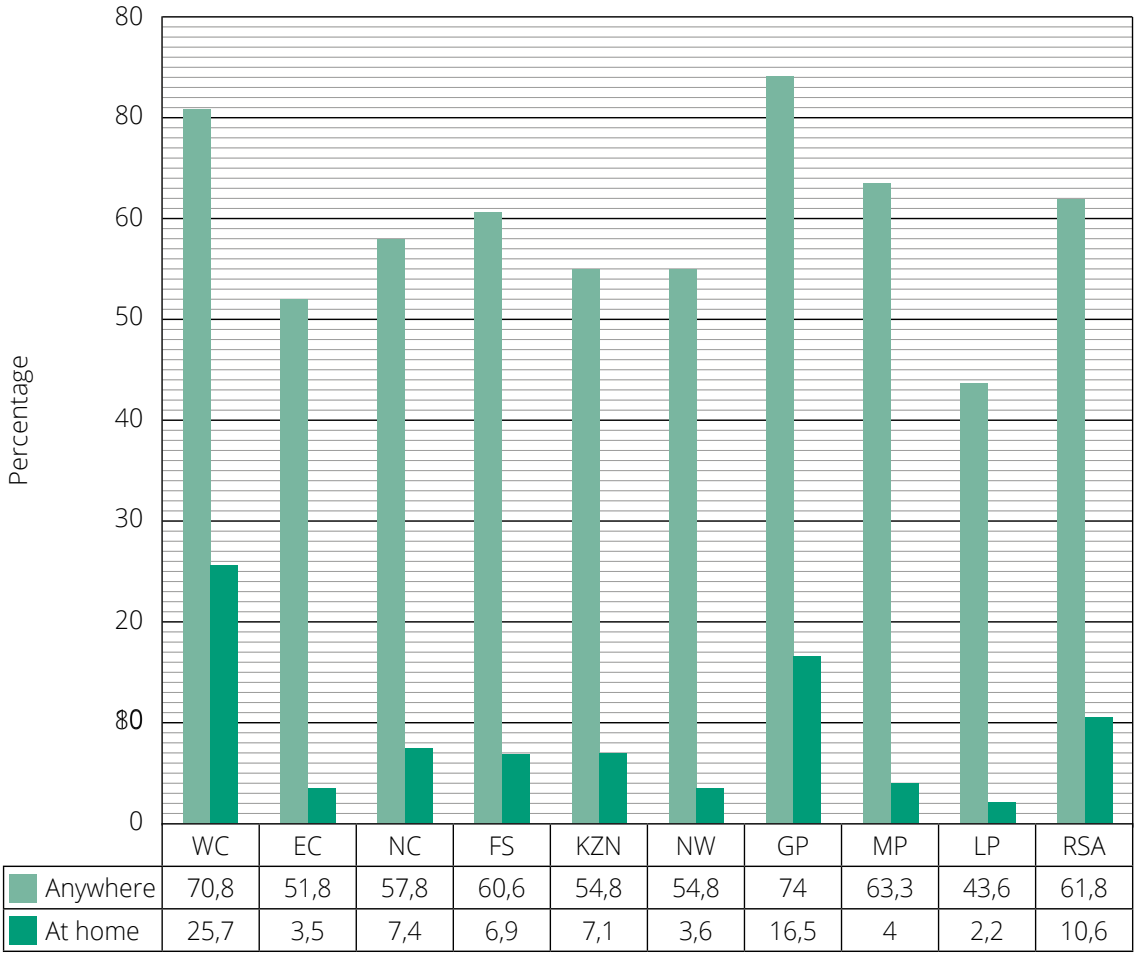
Medical Tax Credits for tax year 2019

Per month (R)	2019
For the tax payer	R310
For the first dependent	R310
For every additional dependent	R209

ANNEXURE B

Question 4

GRAPH: INTERNET ACCESS OF HOUSEHOLDS PER PROVINCE AS A PERCENTAGE IN 2017



KEY:

- Anywhere – Free internet in public places
- At home – Internet access paid by a person in a home

TABLE: NUMBER OF HOUSEHOLDS PER PROVINCE (IN THOUSANDS)

	NUMBER OF HOUSEHOLDS PER PROVINCE (IN THOUSANDS)									
YEAR	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
2016	1 771	1 648	325	862	2 752	1 135	4 546	1 208	1 495	15 742
2017	1 823	1 667	333	882	2 827	1 172	4 709	1 248	1 537	16 198
2018	1 877	1 685	342	901	2 905	1 210	4 884	1 289	1 579	16 672

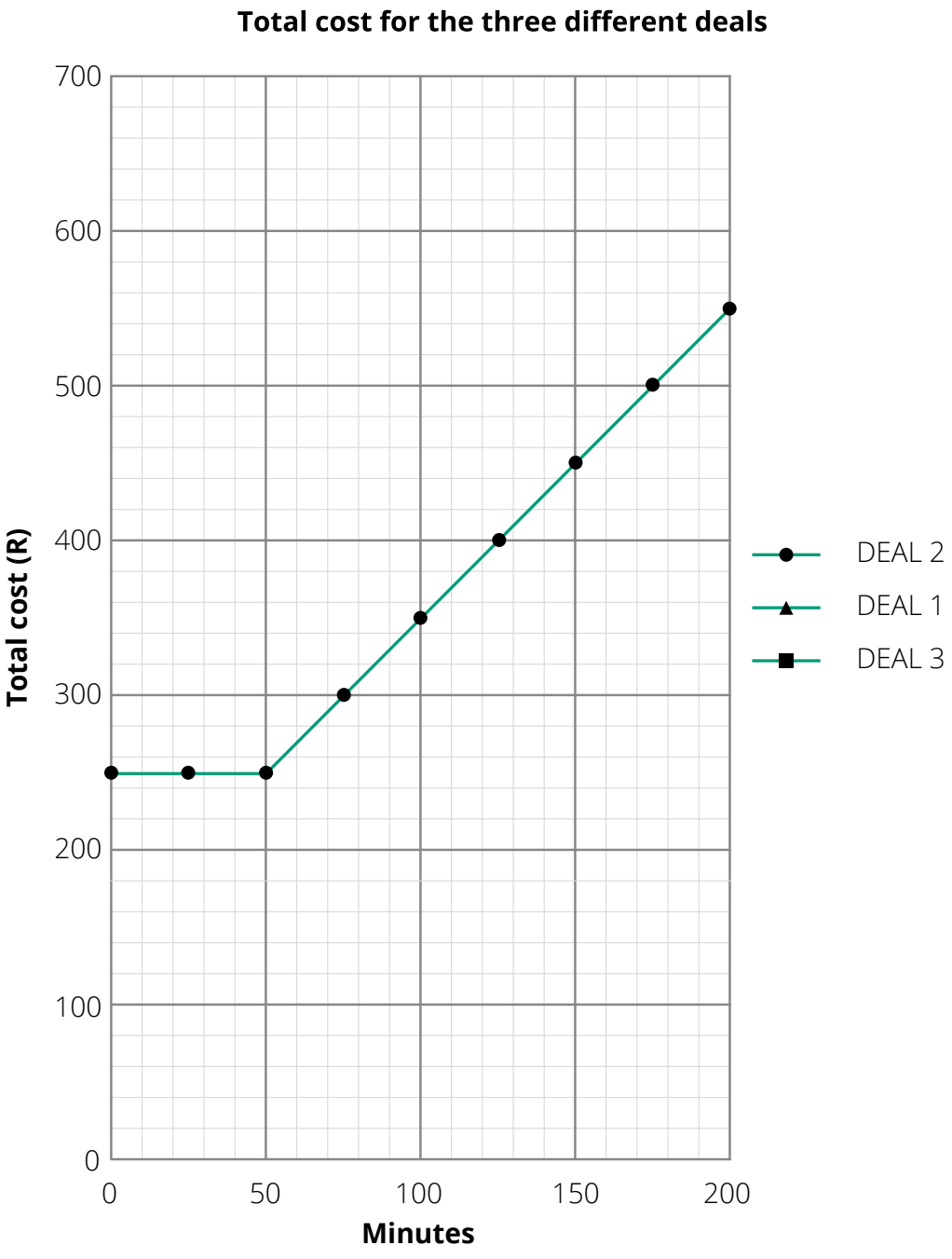
Trial Examination Paper 1

ANSWER SHEET 1

Name: Surname:

Grade:

Question 2.3.2



Trial Examination Paper 2

Name: **Surname:**

Instructions

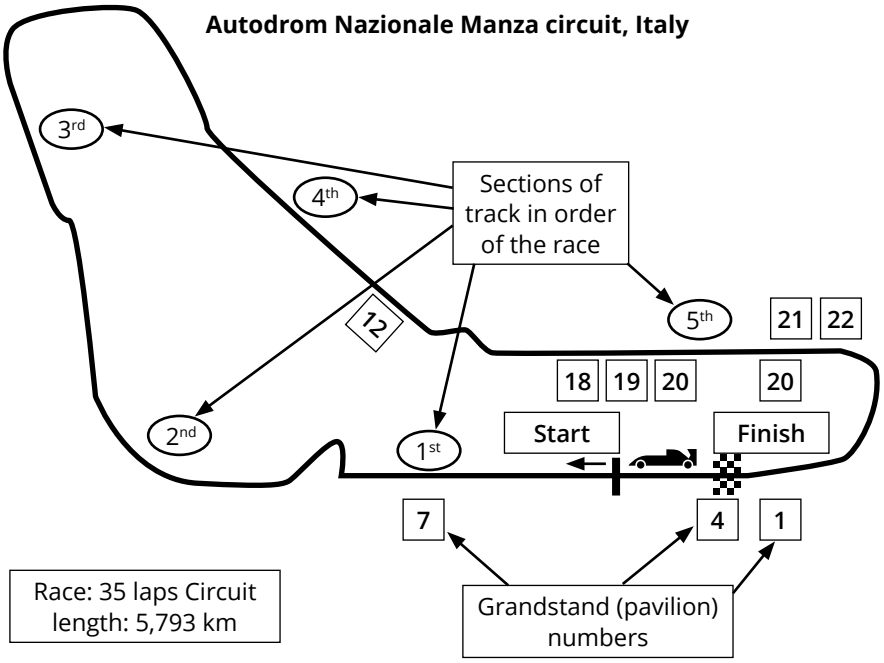
1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the annexures to answer the following questions:
   ANNEXURE A for Question 4.1
   ANNEXURE B for Question 4.2
   ANNEXURE C for Question 4.3
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL the calculations clearly.
7. Round off ALL final answers appropriately to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

Question 1

1.1 James and Andrew are friends. Their favourite motor sport is Formula One racing. The next Formula One Grand Prix that Andrew and James wish to attend will take place in Italy.

The map below shows the race track for the Autodrom Nazionale Monza circuit in Italy, where the Formula One will take place.

Trial Examination Paper 2



Study the map to answer the following questions:

1.1.1 Calculate, to the nearest kilometre, the total distance of the race. (3)

1.1.2 Andrew and James wish to buy tickets for the Formula One Grand Prix in Italy. The ticket provider indicated that the following grandstand seat numbers are available: 12, 18, 21 and 4. They decide to buy tickets for Grandstand 4. Provide ONE possible reason for their choice. (2)

1.1.3 In the table below, Column A shows the sections on the track in the order of the race. Column B shows the different descriptions of the sections on the track. Write down only the correct letter (A, B, C or D) from column B that best describes the 3rd, 4th and 5th sections.

[The correct descriptions for the 1st and 2nd sections have been completed for you and are indicated by "✓".]

COLUMN A	COLUMN B	
Section on track	**Description of section on track**	
1st	✓	From the starting line you will have a long straight stretch until a sharp right turn followed by a sharp left turn
2nd	✓	Continue straight until a slight bend to the right followed by a slight turn to the left
3rd	A	Another long straight stretch with a right turn ending at the finish line
4th	B	Continue with a short straight stretch followed by a bend to the right, a short straight and another bend to the right
5th	C	Followed by a sharp left turn
6th	D	Followed by another long straight stretch ending with a slight left and then right bend

(3)

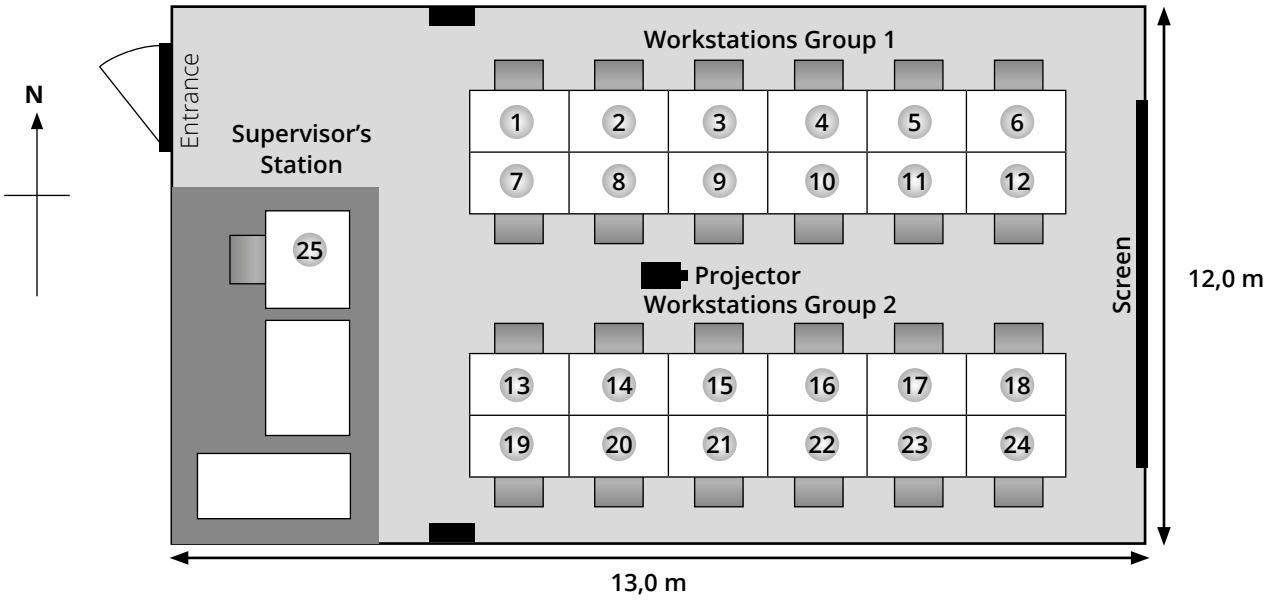
1.2 Andrew has heard that the maximum fuel capacity of a Formula One race car is 39,63 gallons. Calculate the total cost to fill a Formula One race car to its maximum capacity, if fuel costs R31,81 per gallon. (2)

1.3 Rubens Barrichello, a Formula One race car driver, set a new lap record during the 2004 Autodrom Nazionale Monza race in Italy. His record lap time (in minutes and seconds) was 1:21,046. Calculate, in metres per second, the average speed achieved by Rubens Barrichello.

You may use the following formula:

Distance = Speed × Time (4)

1.4 A High School wishes to establish a new computer laboratory and decides on a layout plan of the computer laboratory as shown below.

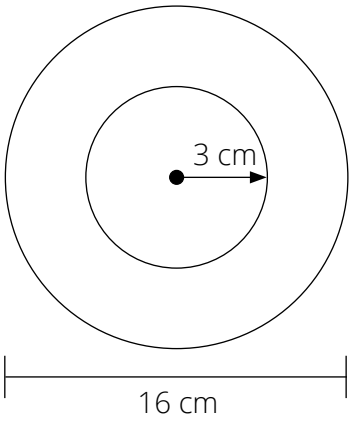


1.4.1 Write down the workstation number where you would sit if you enter the computer laboratory and turn to your right, pass between stations 7 and 13 and take the second last seat on your left, closest to the screen. (2)

1.4.2 Give one possible reason for the data projector to be mounted on the ceiling. (2)

1.4.3 Use the actual length of the southern wall of the computer laboratory to determine the scale of the floor plan. Give your answer as a ratio in the form: 1: (5)

1.5 Andrew will be celebrating his son's birthday soon. He bought a ring cake with the height of 10 cm for his son's birthday. It has a circular opening inside and is covered with chocolate icing. The diameter of the outside ring of the cake is 16 cm and the radius of the inside ring is 3 cm.



Calculate the area of cake that will be covered with icing.

N.B. The inside opening and the bottom of the cake will not be covered.

Surface area of a big circle = $\pi r^2 + 2\pi rh$
Area of a small circle = πr^2
Use $\pi = 3{,}142$ (8)

[31]

Trial Examination Paper 2

Question 2

2.1 A family of six people are living in a water-restricted area in Cape Town where they may use 120 litres of water per person per day supplied by the municipality.

2.1.1 Calculate the maximum amount of water, in kilolitres, that this family may use in ONE month. (Use a 30-day month for your calculations). (3)

2.1.2 TABLE 1 below shows the water tariff charges for Cape Town in 2019/2020. Use TABLE 1 to answer the question below.

TABLE 1: Water tariff charges

Tariff summary (in kilolitre)	Tariff Rand per kilolitre (Without 15% VAT)
0 – 6 kl	15,58
More than 6 – 10,5 kl	22,17
More than 10,5 – 35 kl	31,47
More than 35 kl	69,06

1 kl = 1 000 litres

Janine, one of the family members, claims that they will pay less than R620 per month if the family uses their full municipal limit. Verify, showing all calculations, if the water bill per month, including VAT, is less than R620. (7)

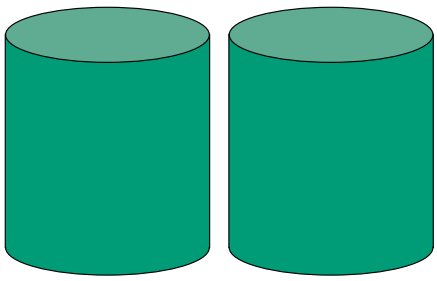
2.2 The family of six people decide to install eco water-storage tanks. This will enable them to use an additional 50% of the municipal limit of 120 litres per person per day.

They bought two eco-tanks with the following dimensions as shown in TABLE 2 below.

TABLE 2: Dimensions and cost of the eco-tank

DIMENSIONS OF THE ECO-TANK		
	Diameter in cm	**Height in cm**
Dimensions	184	214

COST OF INSTALLING AN ECO-TANK	
Price per tank	Installation and delivery cost
R4 920 excluding VAT	R1 900 per tank VAT included



1 000 cm³ = 1 litre

You may use the formula:

[Volume of a cylindrical tank = $\pi \times \text{radius}^2 \times \text{height}$] ($\pi = 3{,}142$)

The two tanks with dimensions as shown above have been installed at their house. They will be filled with rain and borehole water.

2.2.1 Calculate the number of litres of water per day that the family can use from the water tanks. (3)

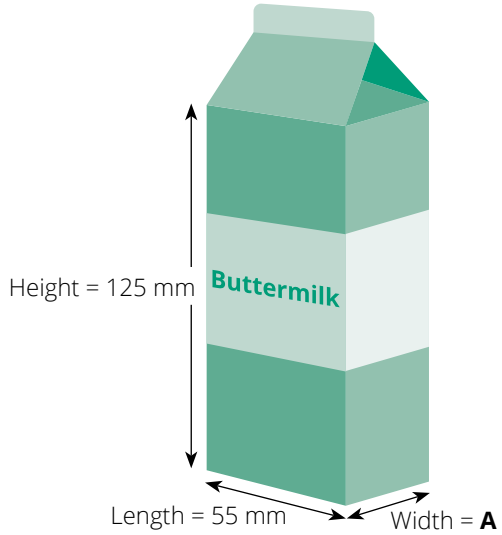
2.2.2 The family will need an additional 10 800 litres per month (30 days) from the tanks. Verify, with the necessary calculations, whether they will have enough water for a month if the tanks are full. (Note: The amount of water in a full tank is equal to the volume of the tank.) (6)

2.3 If it rains an average of nine days in September in Cape Town, determine the probability of randomly selecting a day in September that it will not rain. Give your answer as a fraction. (2)

[21]

Question 3

3.1 Michelle uses a recipe to make rusks for her husband. The recipe requires her to use a certain amount of buttermilk. Below is a picture of a rectangular buttermilk carton showing some of the measurements.



You may use the following formula:

Volume of a rectangular prism = length × width × height

3.1.1 Explain the term "capacity". (2)

3.1.2 The buttermilk carton above contains 0,35 litres of buttermilk, convert the amount of buttermilk to millilitres. (2)

3.1.3 If the buttermilk carton has a square base, what is the dimension of the width, A? (2)

Trial Examination Paper 2

3.1.4 Calculate the volume (in cm^3) of the carton. (4)

3.1.5 The four sides of the carton are printed with the producer's logo and information about the buttermilk. There is no printing on the top and the bottom of the carton. Use the following formula to calculate the total surface area (in cm2) of the carton that can be used for printing.

Area used for printing = 2(width × height) + 2(length × height) (3)

3.2 Michelle uses the following ingredients to make rusks for her husband.

Buttermilk rusks

Ingredients:

- 1,5 kg self-raising flour
- 3 ml salt
- 10 ml cream of tartar
- 500 g butter
- 350 g sugar
- 500 ml buttermilk

The recipe makes 25 rusks.

3.2.1 Write down the amount of butter, in grams, you need to make 25 rusks. (2)

3.2.2 Convert the mass of self-raising flour required to grams (g). (2)

3.2.3 Michelle wants to bake 50 rusks. By how much must she increase the amount of the ingredients? (2)

3.2.4 Michelle calculates that it will take her 40 minutes to mix all of the ingredients and shape the mixture into rusks. At what time should she start mixing the ingredients if she wants to put the rusks in the oven to bake at 15:35? (2)

3.2.5 Michelle has a friend in America who wants to use this rusk recipe but her oven's temperature is in degrees Fahrenheit. Convert 180 °C to °F.

You may use the following formula:

Temperature (in °F) = Temperature (in °C) × 1,8 + 32 (2)

[23]

Question 4

4.1 Stefanie and her family from Australia are planning a visit to Cape Town. They will be visiting the Victoria & Alfred Waterfront during their time there.

ANNEXURE A shows a map of the Victoria & Alfred Waterfront.

Use the map in ANNEXURE A to answer the questions that follow.

4.1.1 What type of scale is used in this map? (2)

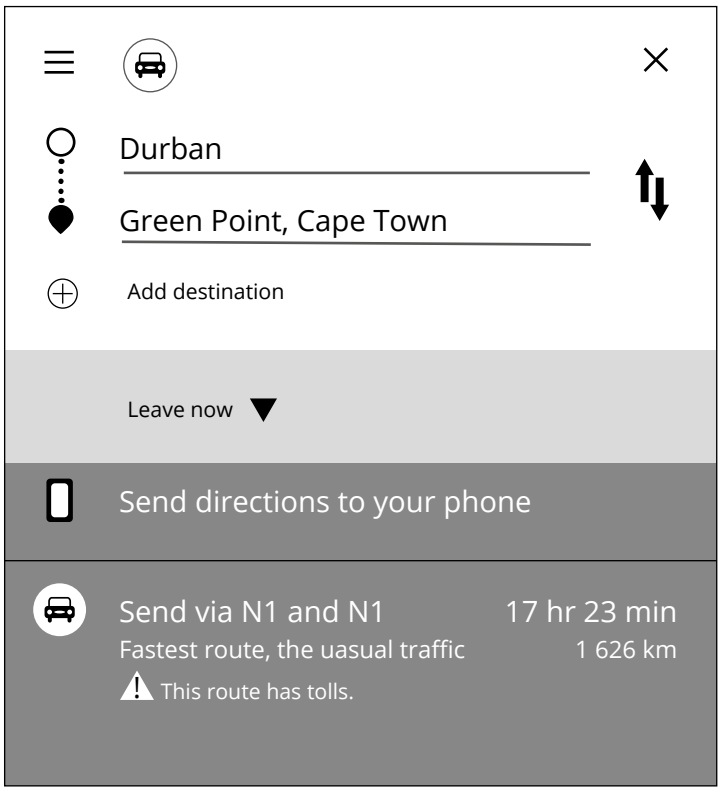
4.1.2 Identify the activity offered at East Pier Road. (2)

4.1.3 At which attraction site would a person be if they were to follow the directions below?

- Merge onto Dock Road from the N1
- Take the first exit at the Dock Road roundabout.
- Continue onto Dock Road and join Western Blvd on your left.
- Continue straight on Western Blvd / M6.
- Turn right into Portswood road.
- Turn left into Beach Road.

Your attraction site is the first one on the right. (2)

4.1.4 Stefanie's family plan to drive to Cape Town from Durban and found the information below on Google maps:



Determine the average speed of this journey to the nearest km/h.

You may use the following formula:

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$ (4)

4.2 While in Cape Town, Stefanie and her family stay in a rented apartment in Green Point.

ANNEXURE B shows a basic outline of the apartment they will be staying in.

Use the floor plan in ANNEXURE B to answer the questions that follow.

4.2.1 What is the maximum number of people that this apartment can sleep? (2)

4.2.2 If Bedroom 1 and Bedroom 2 have the exact same dimensions, determine the length of one of these bedrooms (in m). (2)

Trial Examination Paper 2

4.2.3 Write down the general direction that Bedroom 2 is from the front door (main entrance.) (2)

4.2.4 What fixture is indicated on the floor plan next to the fridge space? (2)

4.3 Stefanie plans buy suitcases in Cape town to sell in Australia . The bags are packed in boxes as indicated in ANNEXURE C and transported in Rogue boxes in a ship. All boxes should be packed upright.

Study ANNEXURE C and answer the following questions.

4.3.1 Show that the height of the Rogue box is 2,8 m if its capacity is 13,86 m^3

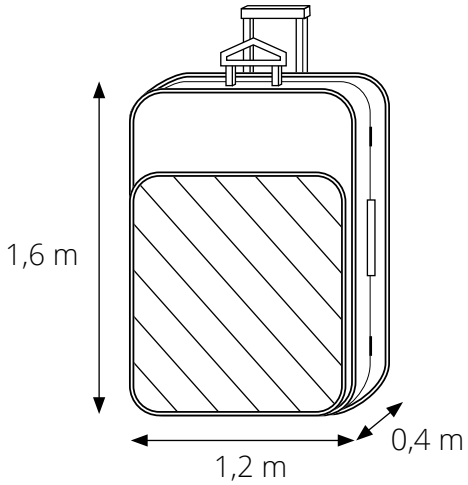
. You may use the following formula:

Volume of rectangular box = Length × Breadth × Height (4)

4.3.2 Tira claims that they should pack the boxes in a Rouge box as follows: Length of the packing box against the width of the Rogue box and width of the packing box against the length of the Rogue box, in order to pack more boxes on the base of the Rogue box. Verify his claim. (8)

4.3.3 Each suitcase is wrapped with a triple layer of bubble wrap plastic to protect it.

- The top and bottom of each suitcase are not covered.
- The dimensions of the suitcase are indicated below.



a) Determine the size of the plastic bubble wrap (total surface area) needed to cover the suitcase.

You may use the formula:

Surface area = 2(length × height) + 2(width × height) (5)

b) Show that the length of the plastic needed to cover the suitcase is 960 cm. (4)

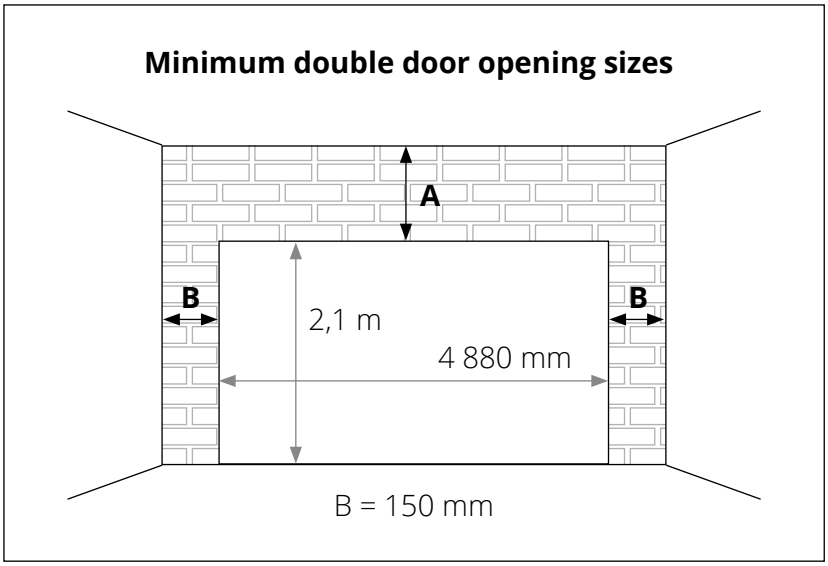
[39]

Trial Examination Paper 2

Question 5

5.1 The diagram below shows the minimum opening sizes of a double door garage, surrounded by a wall built of a single layer of bricks.

Study the diagram and answer the questions that follow.



5.1.1 Identify the length of the minimum double door opening. Give your answer in metres. (2)

5.1.2 A is triple the distance marked B. Write down the distance marked A. (2)

5.1.3 Write down the height of the wall in metres. (3)

5.1.4 Determine the area of the single garage door opening if length is half the length of the double door garage opening and the height remains the same.

You may use the formula:

Area = Length × Width (4)

5.1.5 Calculate the area covered by bricks in m^2

You may use the formula:

Area = Length × Width (5)

5.2 Asange plans to increase the height of the wall behind her house by 2,5 m because of burglaries. The standard size of the brick to be used is 230 mm by 110 mm by 76 mm.

5.2.1 Calculate the height of the brick and cement if cement of 12 mm thickness is used around the bricks when laying them. (2)

5.2.2 Determine the number of rows (layers) of bricks needed to increase the height of the wall, if the bricks are lengthwise along the wall. (3)

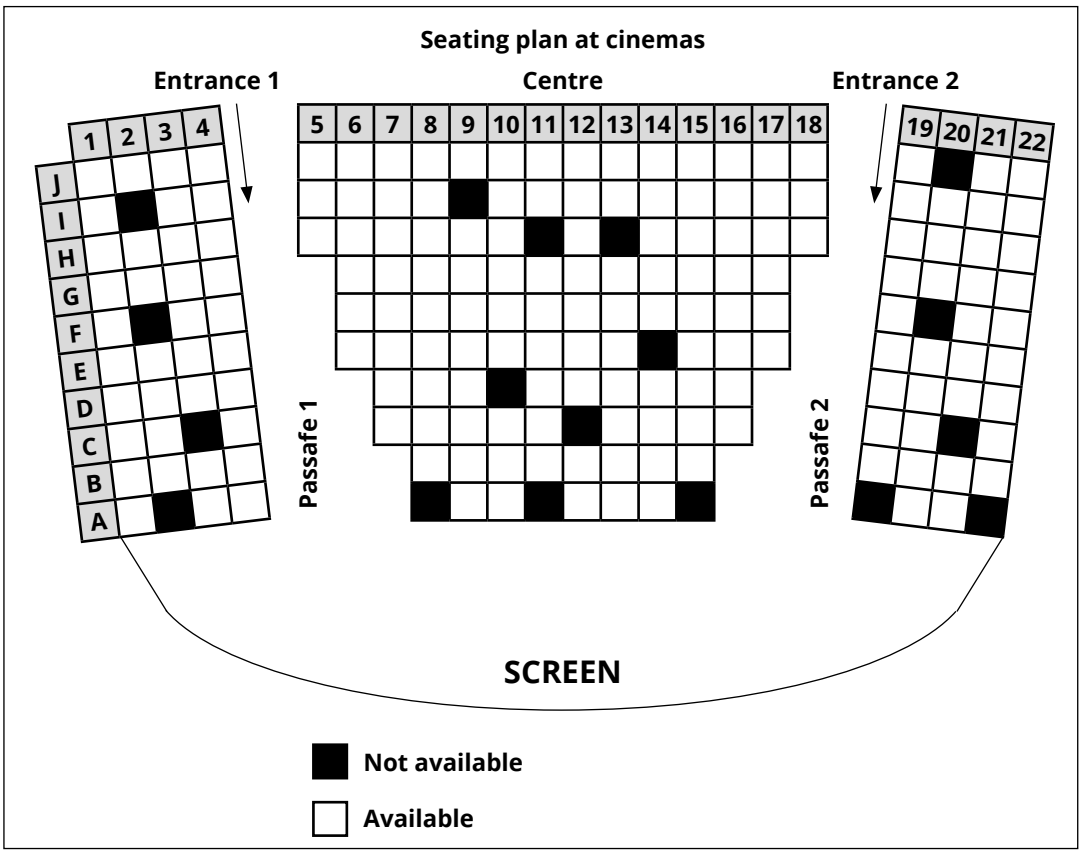
Trial Examination Paper 2

5.2.3 Calculate the volume of the standard size brick in cm^3

You may use the formula:

Volume = Length × Width × Height (4)

5.3 Asange plans to go and watch a movie with his friends at Ecstasy cinema in his town. Study the Ecstasy cinema seating plan below and answer the questions that follow.



5.3.1 Asange holds a ticket numbered K4 and enters the cinema using entrance 2. Assist Asange to find his seat. (2)

5.3.2 In which general direction does seat J5 face? (2)

5.3.3 Allocate seat numbers for the seats that are not available on the front row at the centre of the cinema. (3)

5.3.4 Write down the total number of available seats on the north-eastern side of the screen. (2)

5.3.5 James gets into the cinema through entrance 1. He goes down the passage, enters the second front row on his left and takes the second last seat. Write down James' seat number.

(2)

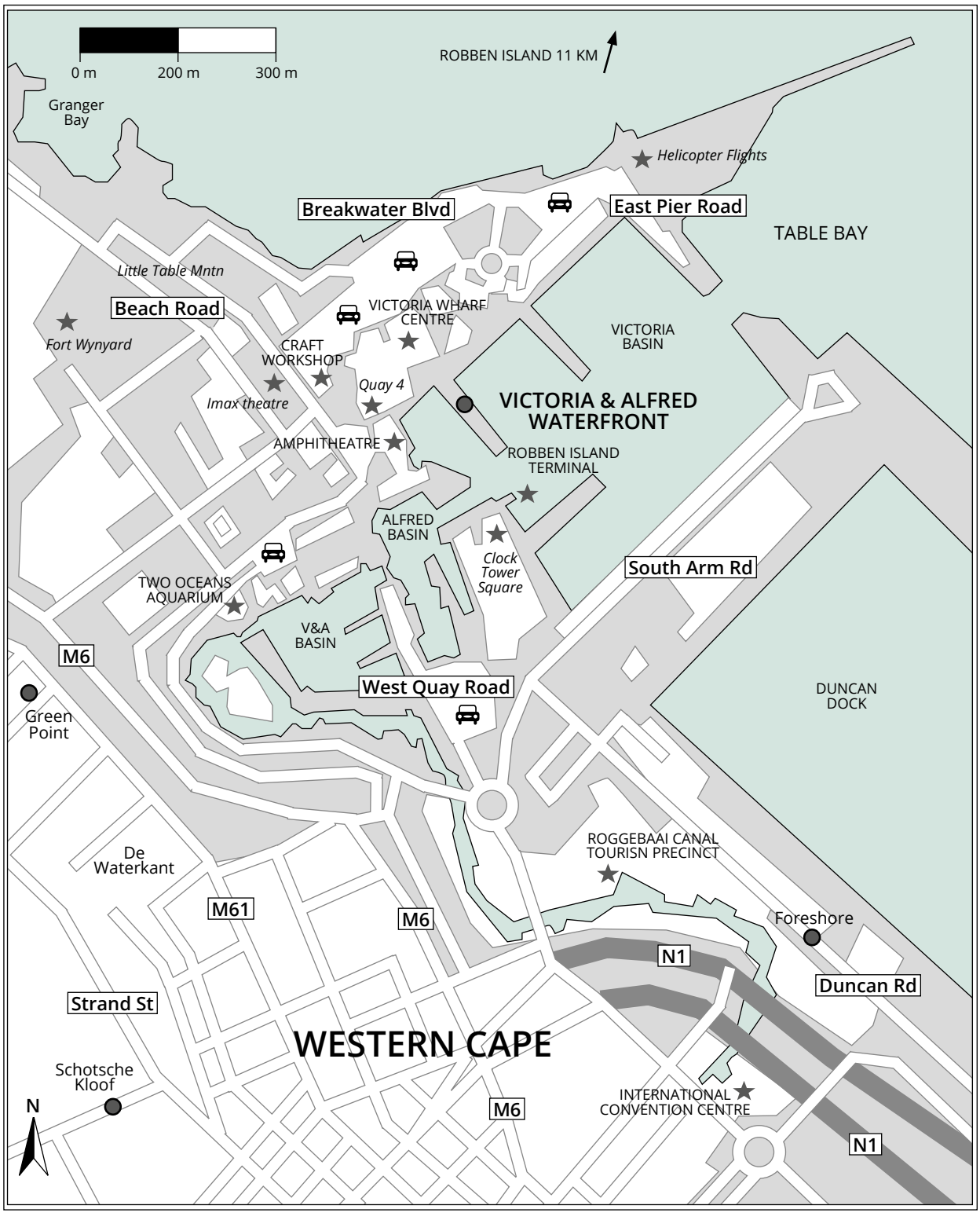
[36]

Trial Examination Paper 2

ANNEXURE A

Question 4.1

MAP OF VICTORIA & ALFRED WATERFRONT



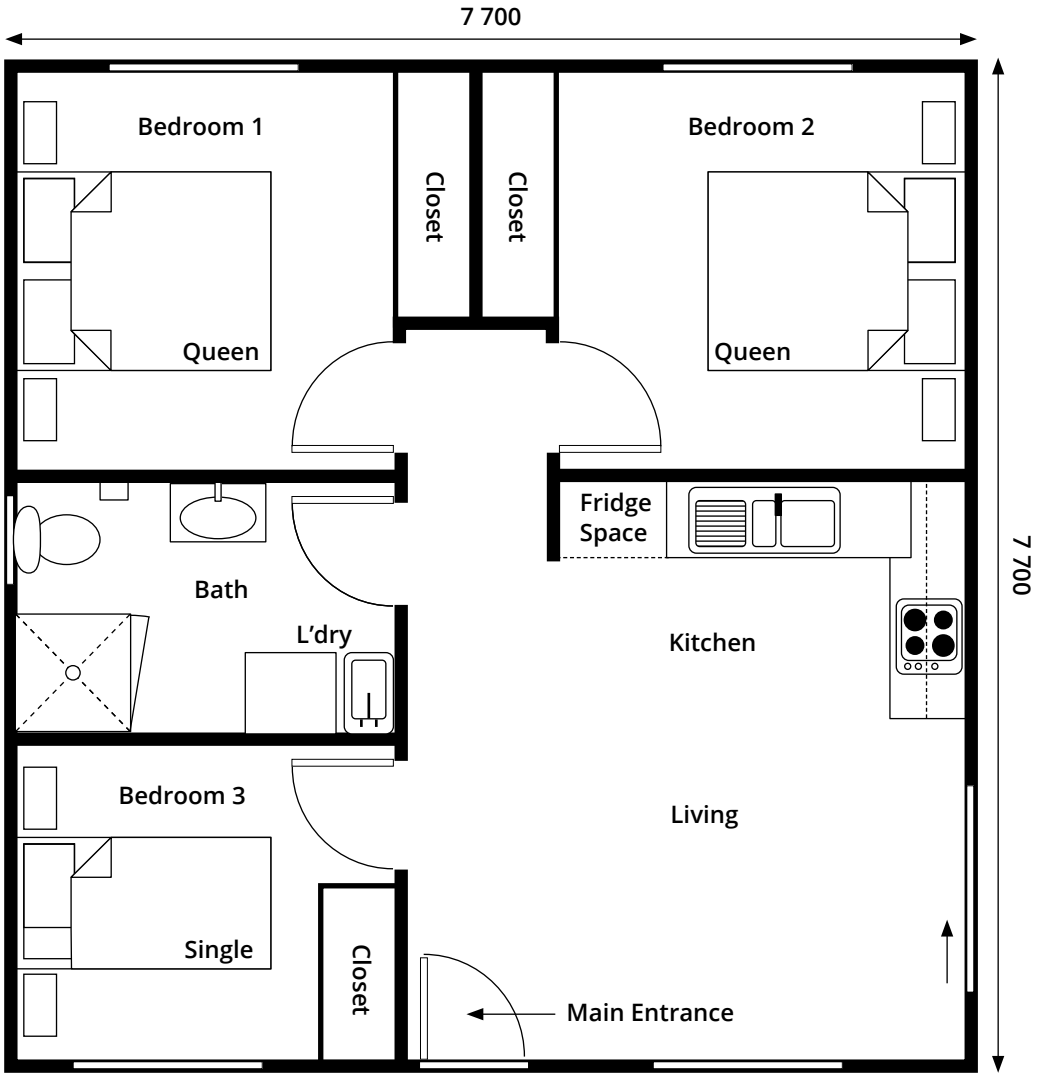
Trial Examination Paper 2

ANNEXURE B

Question 4.2

BASIC FLOOR PLAN OF THE RENTAL APARTMENT

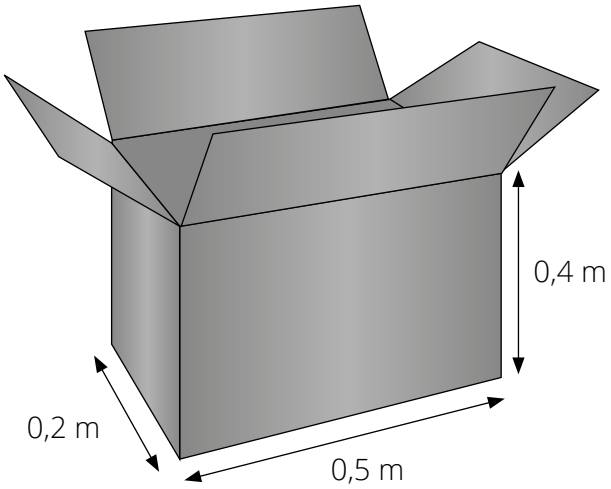
Outside wall measurements are in mm



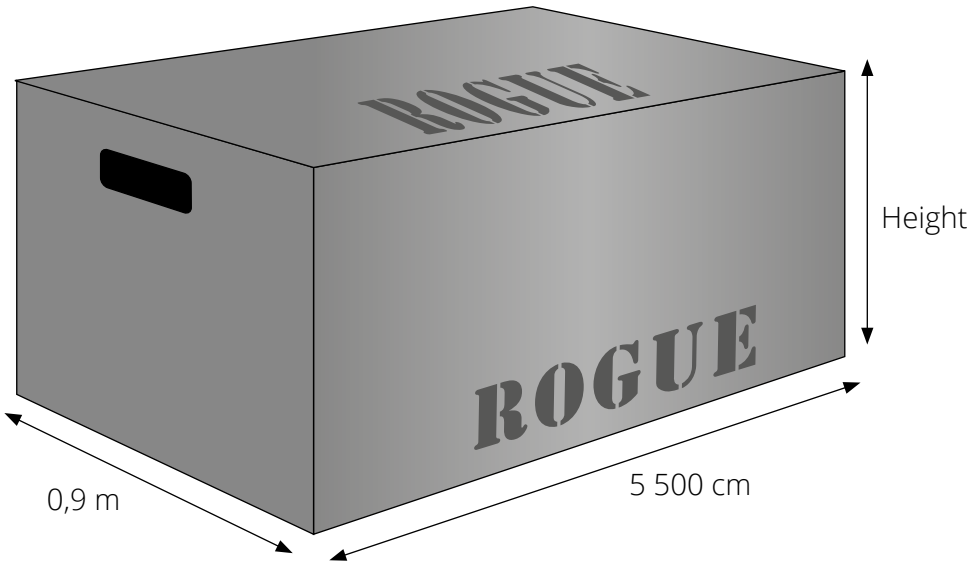
ANNEXURE C

Question 4.3

Packing box



Rogue box



Trial Examination Paper 1 Memorandum

Trial Examination Paper 1 Memorandum

TOTAL: 150

Question 1

1.1.1 The increase in cost price of the thermometer from 2019 to 2020. ✓✓ (2)

1.1.2 Difference in cost price:
R565 – R500 ✓
= R65 ✓ (2)

1.1.3 Selling price of infrared thermometer:
$R565 \times \frac{140}{100}$ ✓
= R791 ✓ (2)

1.2.1 20 May 2020 ✓✓ (2)

1.2.2 R22,222255 ✓✓ (2)

1.2.3 Japanese Yen ✓✓ (2)

1.3.1 Netflix ✓✓ (2)

1.3.2 % subscribers to Iflix:
100% – (44 + 4 + 20 + 21 + 10)% ✓
= 100% – 99%
= 1% ✓ (2)

1.3.3 Netflix, Showmax, iRoko, Others, Amazon Prime, iFlix ✓✓ (2)

1.3.4 Horizontal Bar graph ✓✓ (2)

(2)

[20]

Question 2

2.1.1 Transaction fee is the fee that the bank charges their customers for their service ✓✓ (2)

2.1.2 R4 452,96 – A = R3 800,96 ✓
R4 452,96 – R3 800,96 = A ✓
A = R652 ✓ (3)

2.1.3 Solly's monthly net salary
= R17 675,90 ✓
Solly's Annual net salary
= R17 675,90 × 12 ✓
= R212 110,80 ✓ (3)

2.1.4 It is a credit. ✓ Because the money belongs to Solly ✓ (2)

2.1.5 Money spent on calls
= R289,32 – R85,00 ✓
= R204,32 ✓ (2)

2.1.6 Annual interest rate on R19 890,07 is 1,8% ✓
Monthly interest rate on R19 890,07
$= \frac{1,8\%}{12}$ ✓
= 0,15% ✓ (3)

2.1.7 Transaction fee = R2 ,50 + 0.95% of the amount deposited
= R2,50 + 0,95% of R325,00 ✓
= R2,50 + (0.0095 × R325,00)
= R2,50 + R3,0875 ✓
= R5,5875
= R5,59 ✓ (3)

2.1.8 Total transaction fees = R1,50 + R6,00 + R6,00 + R6,00 + R6,00 + R6,00 + R5,59 + R8,20 ✓
= R45, 29 ✓✓ (3)

2.2.1 A home loan is the money given by the bank to help one in buying a house or property. ✓✓ (2)

Trial Examination Paper 1 Memorandum

2.2.2 20 years ✓✓ (2)

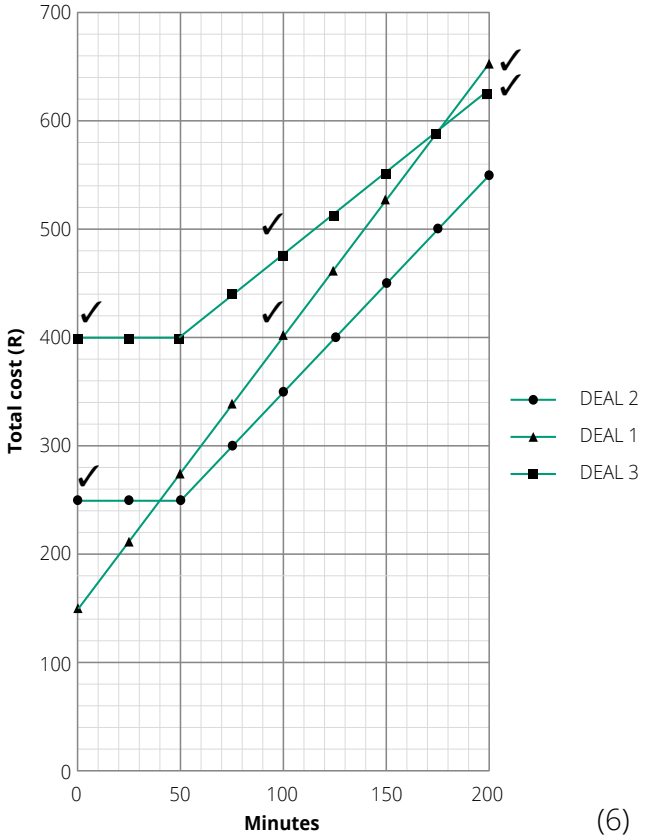
2.2.3 Deposit = R580 440,00 × 25% ✓
= R580 440,00 × 0,25
= R145 110,00 ✓
Money loaned to Solly and Queen
= R580 440,00 – R145 110,00 ✓
= R435 330,00 ✓ (4)

2.2.4 Monthly repayment
$= \frac{\text{Bond amount}}{1\,000} \times$ bond repayment factor
Monthly repayment
$= \frac{R435\,330,00}{1\,000} \times 10,15$ ✓
= 435,330 × 10,15 ✓
= R4 418,5995 ✓
= R4 418,60 ✓ (4)

2.2.5 Total amount after 30 yrs
= R4 418,60 × 20 yrs ✓
= R4 418,60 × 240 months
= R1 060 464 ✓ (2)

2.3.1 R8 000 ✓✓ (2)

2.3.2 **Total cost for the three different deals**



(6)

[43]

Question 3

3.1.1 Medical aid credits
= (R310 + R310 + R209) × 12 ✓✓
= R829 × 12
= R9 948 ✓ (3)

3.1.2 Annual taxable income
= (R44 690 – R2 687) × 12 ✓
= 42 003 × 12 ✓
= R504 036 ✓ (3)

3.1.3 Tax ✓✓
= R100 263 + 36% × (R504 036 – R423 300)
= R100 263 + 0,36 × 80 736
= R100 263 + R29 064,96 ✓
= R129 327,96 ✓

Tax Rebate:
= R129 327,96 – R14 067 ✓
= R115 260,96

Medical credits:
= R115 260,96 – R9 948 ✓
= R105 312,96

Monthly tax contribution
= R105 312,96 ÷ 12
= R8 776,08 ✓ (7)

3.2 Singles: Income
= 102 × R100 = R10 200 ✓

Couples: Discount = 10% of R200 = R20 ✓

Couples income= 86 × R180 = R15 480 ✓

Total = R10 200 + R15 480 = R25 680 ✓

Yes, they have reached the budgeted amount. ✓ (5)

3.3 2021 Ticket price: ✓
= \$455 × (1,037) OR 3,7 ÷ 100 × 455
= 16,835

= \$471,835 ✓ 455 + 16,835 = 471,835 ✓

2022 Ticket price:
= \$471,835×1,028
≈ \$485,05 ✓ (4)

Trial Examination Paper 1 Memorandum

3.4.1 Company A:
R799,90 + (R423,65 × 30) + R69,00 + R633,32 + R637,50 ✓
= R14 849,22 ✓

Company B:
R760 + (R370 × 36) + R1 599 ✓
= R15 679,00 ✓

Difference = R15 679 – R14 849,22
= R829,78 ✓ (5)

3.4.2 Interest May:
Arrears + Interest = R185,00 × $\frac{130}{100}$
= R240,50 ✓

Interest June:
Principal = R185,00 + R240,50
= R425,50 ✓
Arrears + Interest = R425,50 × $\frac{130}{100}$
= R553,15 ✓

Total Instalment due for July:
Instalment July = R370,00
Interest + Arrear instalments = R553,15 ✓
Total instalment = R923,15 ✓ (5)

[30]

Question 4

4.1 Range = 4 546 000 – 325 000 ✓✓
= 4 221 000 ✓ (3)

4.2

NC	FS	NW	MP	**LP**	EC	WC	KZN	GP
342	901	1 210	1 289	**1 579**	1 685	1 877	2 905	4 884

✓

Median : Limpopo ✓ (2)

4.3 Western Cape (WC) :
Number of households with internet
= $\frac{25,7}{100}$ × 1 823 (thousands) ✓✓
= 468,511 (thousands) or
468 511 households ✓

Gauteng (GP):
Number of households with internet
= $\frac{16,5}{100}$ × 4 709 (thousands) ✓
= 776,985 (thousands) or
776 985 households ✓
Not Valid ✓ (6)

4.4 a) 2017 IQR:
Q_1 = (882 + 1 172) ÷ 2 = 1 027 ✓
Q_3 = (1 823 + 2 827) ÷ 2 = 2 325 ✓
IQR = $Q_3 - Q_1$
= 2 325 – 1 027 ✓
= 1 298 ✓
2018 IQR = 1 335,5

Comparison: IQR of 2017 is smaller than the IQR of 2018. ✓ (5)

b) Gauteng (GP). ✓ GP has 1 979 000 (nearly 2 million) more households than KZN who is the closest province to GP in terms of the number of households. ✓✓ (3)

4.5 P(No internet access in home)
= 100 – 10,6 ✓
= 89,4% ✓ (2)

[21]

Question 5

5.1.1 Continuous ✓✓ (2)

5.1.2 1 933 560 ✓✓ (2)

5.1.3 $\frac{14,44}{100}$ × 235 278 ✓
= 33 974 ✓ (2)

5.1.4 Burkina Faso; Australia; South Africa; China; Canada; Spain; Italy; United States of America ✓✓ (2)

5.1.5 46,66 million = 46 660 000 people ✓
$\frac{241\ 717}{46\ 660\ 000}$ × 100 ✓
= 0,5180390056% ✓ (3)

5.1.6 $\frac{2\ 649\ 656}{8}$ ✓
= 331 207 ✓ (2)

5.1.7 $P = \frac{6}{8}$ ✓✓
$= \frac{3}{4}$ ✓ (3)

5.2.1 Impossible; none ✓✓ (2)

5.2.2 194 093 – 6 861 ✓
= 187 232 ✓ (2)

5.2.3 LP or Limpopo ✓✓ (2)

Trial Examination Paper 1 Memorandum

5.3.1 8,71 billion = 8 710 million ✓
8 710 million ƒ for 879 ✓
= 9,9 million ✓
Revenue per outlet = 9,9 million (3)

5.3.2 41 ; 61; 164; 245;481; 561; 879 ✓
Median = 245 ✓ (2)

5.3.3 Captain DoRegos ✓✓ (2)

5.3.4 b ✓✓ (OR R2 830 800 000) (2)

5.3.5 $P = \frac{3PA}{7\ PA} \times 100$ ✓✓
= 42,86 % ✓ (3)

5.3.6 Burger King ✓✓ (2)

[36]

TOTAL: 150

Trial Examination Paper 2 Memorandum

Trial Examination Paper 2 Memorandum

TIME: 3 hours TOTAL: 150

Question 1

1.1.1 Total Distance = 5,793 × 35 ✓
= 202,76 ✓
≈ 203 km ✓ (3)

1.1.2 It is directly across the finishing line. ✓✓ (2)

1.1.3 3rd – B ✓
4th – D ✓
5th – A ✓ (3)

1.2 Total Cost = 39,63 × R31,81 ✓
= R1 260,6303 ✓ (2)

1.3 Distance = 5,793 km ×100
= 5 793 m ✓

Time = 60 + 21,046 ✓
= 81,046

Speed = 5 793 ÷ 81,046 ✓
= 71,47792612
= 71 m/s ✓ (4)

1.4.1 Workstation 11 ✓✓ (2)

1.4.2 Out of the way/ Better quality screening/ Permanently in focus/ Safer ✓✓
(Any appropriate reason) (2)

1.4.3 Measured length = 15 cm ✓
Southern walls length = 18 m
Scale:
15 cm : 18 m ✓
15 cm : 18 × 100 ✓
15 : 1 800
(15 ÷ 15) : (1 800 ÷ 15) ✓
1 : 120 ✓ (5)

1.5 Radius of big circle = 8 cm ✓ A
Area of the big circle = $2\pi rh + \pi r^2$
= (2 × 3,142 × 8 cm × 10 cm) ✓+
(3,142 × (8 cm)^2) ✓ F
= 703,808 cm^2 ✓ A

Area of the small circle = πr^2
= 3,142 (3 cm)^2 ✓
= 28,278 cm^2 ✓ A

Total Area covered:
= 703,808 cm^2 – 28,278 cm^2 ✓ M
= 675,53 cm^2 ✓ A

[31]

Question 2

2.1.1 Maximum water usage = 120 × 6 × 30 ✓
= 21 600 ✓ ÷ 1 000
= 21,6 kl ✓ (3)

2.1.2 0 to 6 kl = 6 × 15,58
= R93,48 ✓

6 to 10,5kl = 4,5 × 22,17
= R99,77 ✓

10,5 to 35 kl = 11,1 × R31,47
= R349,32 ✓

Total amount including VAT
= R93,48+ R99,77 + R349,32 ✓
= R542,57 × 1,15 ✓
≈ R623,96 ✓
Statement is wrong/incorrect. ✓ (7)

2.2.1 50% of 120 = 0,5× 120 ✓
= 60 ℓ ✓

Family per day = 60 × 6
= 360 ℓ ✓ (3)

2.2.2 Volume of tank
= π × radius × radius × height
= 3,142 × 92 × 92 ✓ × 214 ✓
= 5 691 092,032 cm^3 ÷ 1 000 ✓
≈ 5 691,09 ✓
Volume of two water tanks = 5 691,09 × 2
= 11 382,18 ℓ ✓
Amount of water to be used from tank
= 10 800 ℓ
They will have sufficient water ✓ (6)

2.3 P(no rainy days = $\left(\frac{30-9}{30}\right) = \frac{21}{30}$ ✓✓ (2)

[21]

Question 3

3.1.1 Capacity is the maximum amount of liquid a container/shape can contain, usually measured in millilitres/litres etc. ✓✓ (2)

3.1.2 0,35 litres × 1 000 ✓
350 millilitres ✓ (2)

3.1.3 Length = 55 mm
Width (A) = 55 mm ✓✓ (2)

3.1.4 Length and width are the same (square base):
$\frac{55\text{ mm}}{10}$ ✓
= 5,5cm ✓
Height:
$\frac{125\text{ mm}}{10}$
= 12,5 cm
Volume = length × width × height
= 5,5 × 5,5 × 12,5 ✓
= 378,125 cm^3 ✓ (4)

3.1.5 Surface area
= 2(width × height) + 2(length × height)
= 2(5,5 cm × 12,5 cm) + 2(12,5 cm × 5,5 cm) ✓
= 2(68,75 cm^2) + 2(68,75 cm^2) ✓
= 137,5 cm^2 + 137,5 cm^2
= 275 cm^2 ✓ (3)

3.2.1 500 g ✓✓ (2)

3.2.2 Self-raising flour
1,5 kg × 1 000 ✓
= 1 500 g ✓ (2)

3.2.3 $\frac{50}{25}$ ✓
= 2 times ✓ (2)

3.2.4 15:35 – 40 minutes ✓
= 14:55 ✓ (2)

3.2.5 Temperature (in F)
= temperature (in C) × 1,8 + 32
= 180 C × 1,8 + 32 ✓
= 356 F ✓ (2)

[23]

Question 4

4.1.1 Bar Scale ✓✓ (2)

4.1.2 Helicopter flight ✓✓ (2)

4.1.3 IMAX theatre ✓✓ (2)

4.1.4 speed = $\frac{\text{distance}}{\text{time}}$
Time = 17 h 23 min = 17,38 h ✓
speed = $\frac{1\,636}{17{,}38}$ ✓
= 94,13 km/h ✓
≅ 94 km/h ✓ (4)

4.2.1 5 ✓✓ (2)

4.2.2 Length of one bedroom = $\frac{7\,700}{2}$ ✓
= 3 850 mm
= 3,85 m ✓ (2)

4.2.3 SW ✓✓ (2)

4.2.4 Sink/Basin ✓✓ (2)

4.3.1 13,86 m^3 ✓ = 5,5 m × 0,9 m × h ✓
h = 13,86 ÷ 4,95 ✓
h = 2,8 m ✓

4.3.2 Option 1:
$\frac{5,5}{0,2}$ = 27,5 ≈ 27 boxes ✓
$\frac{0,9}{0,5}$ = 1,8 ≈ 1 box ✓
Total no. of boxes = 1 × 27
= 27 boxes ✓

Option 2:
$\frac{5,5}{0,5}$ = 11 ≈ boxes ✓
$\frac{0,9}{0,2}$ = 4,5 ≈ 4 boxes ✓
Total no. of boxes = 11 × 4
= 44 boxes ✓
Invalid ✓
Option 2 will have more boxes ✓

Trial Examination Paper 2 Memorandum

4.3.3 a) Surface area = 2(1,2 × 1,6) +
2(0,4 × 1,6) ✓
= 3,84 m^2 + 1,28 m^2
= 5,12 m^2
Total Surface area (Triple layer)
= 5,12 m^2 × 3 ✓
= 15,26 m^2 ✓

b) Perimeter = 2(1,2 m + 0,4 m) 3
= 3,2 m × 3 ✓
= 0,6 m × 100 ✓
= 960 cm ✓

[39]

Question 5

5.1.1 Length = 4 880 mm ÷ 1 000 ✓
= 4,88 m ✓

5.1.2 Distance A = 3 (150 mm) ✓
= 450 mm ✓

5.1.3 Height of the wall
= 2,1 m + (450 mm ÷ 1 000) ✓
= 2,1 m + 0,45 m ✓
= 2,55 m ✓

5.1.4 Area = Length Width
= $\frac{4,88}{2}$ ✓ × 2,1 m ✓ M
= 5,124 m^2 ✓ CA ✓ Unit

5.1.5 Area covered by bricks
= Area of garage – Area of double door
= (2,55 m × 5,18 m) ✓ – (4,88 m × 2,1 m) ✓
= 13,209 m^2 ✓– 10,248 m^2 ✓
= 2,961 m ✓

5.2.1 Height of the bricks and cement
= (12 × 2) + 76 mm ✓
= 100 mm ✓

5.2.2 Number of rows of brick = $\frac{2\ 500}{100}$ ✓M ✓M
= 25 ✓

5.2.3 Volume = 23 cm ×11 cm × 7,6 cm ✓✓
= 1 922,8 ✓cm^3 ✓

5.3.1 There is no seat for Lundi here ✓✓

5.3.2 South ✓✓

5.3.3 A8 ✓
A11 ✓
A15 ✓

5.3.4 35 ✓✓

5.3.5 B14 ✓

Notes

Notes

Notes

Notes

Notes

Notes

Pearson South Africa

At Pearson, home of ***Maskew Miller Longman*** and ***Heinemann,*** we're here to help people make progress in their lives through learning.

We work with teachers and learners to create and continually improve our wide range of products and services. We create content in all 11 official languages for learners from pre-school to Grade 12. Whether it's our trusted CAPS-approved textbooks, digital and supplementary resources, or professional development courses, we put the learner at the heart of everything we do.

Every day all over South Africa, our products and services help learning flourish – because wherever learning flourishes, so do people.

Also available:

Browse and purchase Pearson eBooks at shop.**pearson.co.za**

Contact us
T: 021 532 6008
E: pearsonza.enquiries@pearson.com

Online Teacher Support
www.classroomsolutions.co.za

Learn more at za.pearson.com

http://za.pearson.com

505DDC30-1DEC-40D8-83D1-084A44AB8131

ISBN 978-1-4857-2047-8

Pearson