



SUBJECT : MATHEMATICAL LIT

**PAPER : PAPER 1 TRIAL QUESTION PAPER &
MEMO**

YEAR : 2024

GRADE : 12

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Department of
Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION

GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2024

MARKS: 150

TIME: 3 HOURS

**This question paper consists of 13 pages,
1 answer sheet and an addendum with 2 annexures.**

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:
 - ANNEXURE A for QUESTION 3.1
 - ANNEXURE B for QUESTION 5.1
3. Answer QUESTION 2.1 on the attached ANSWER SHEET.
Write your name and surname in the spaces provided on the ANSWER SHEET. Hand in the ANSWER SHEET with your ANSWER BOOK
4. Start EACH question on a NEW page.
5. An approved calculator (non-programmable and non-graphical) may be used unless stated otherwise.
6. Show ALL calculations clearly.
7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Pictures and diagrams are NOT necessarily drawn to scale unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

- 1.1 In TABLE 1 below is a list of explanations and definitions of concepts used in Mathematical Literacy.

TABLE 1: EXPLANATIONS AND DEFINITIONS OF CONCEPTS

A	Annual tax payable before rebates.
B	A special type of diagram is used to determine the outcomes of an event in a game.
C	A numerical description of how likely an event is to occur.
D	Ordinary and necessary costs of running a small business.
E	The financial benefit is realised when money generated from a business exceeds the expenses, costs, and taxes involved in keeping the business.
F	The process of using a research tool to gather information.
G	Chance of a particular outcome in a game of sport.
H	A tax relief is given to a taxpayer.

Use the information above to write down the letter of the explanation or definition (A to H) of EACH of the following:

- 1.1.1 Survey (2)
- 1.1.2 Tax rebate (2)
- 1.1.3 Probability (2)
- 1.1.4 Profit (2)

1.2

A gas cylinder and outdoor cooker are useful devices to provide an alternative energy source during camping.

Below is a picture of a set consisting of a gas cylinder and an outdoor cooker with different payment options.

PAYMENT OPTIONS OF A GAS CYLINDER AND OUTDOOR COOKER SET

CASH PRICE	HIRE-PURCHASE	ONLINE CREDIT
R10 099 (including 15% VAT)		
	Deposit: 10% Instalment: R276,45 p.m. × 36 months Interest rate: 9,5%	Instalment: R942,50 p.m. × 12 months Interest rate: 9,76%

[Source: walmart.com]

Use the information above to answer the questions that follow.

1.2.1 Name the TWO most costly payment options for this gas cylinder and outdoor cooker set. (2)

1.2.2 Define *hire-purchase* within the given context. (2)

1.2.3 Write down the interest rate if the gas cylinder and outdoor cooker set were bought on hire-purchase. (2)

1.2.4 Calculate the total cost of the gas cylinder and outdoor cooker set, using online credit. (2)

1.2.5 A 10% discount is given on the cash price.

Calculate the amount of discount given if the gas cylinder and outdoor cooker set are purchased for cash. (2)

1.2.6 Choose which ONE of the following **A**, **B** or **C** completes or explains the leading statement below the best.

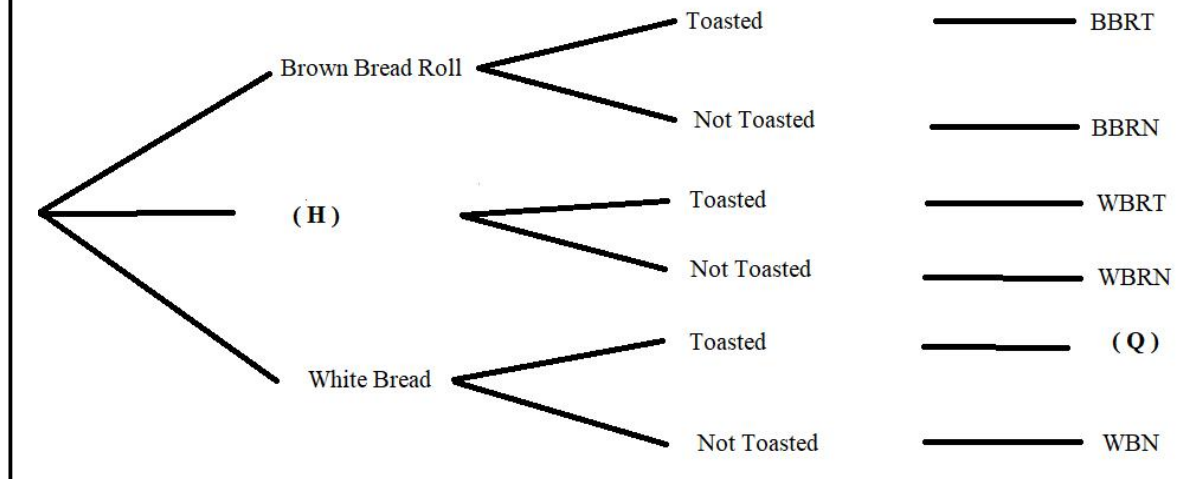
Statement: '15% VAT is an indirect form of tax because it is ...'

- A. included in the cash price.
- B. paid straight to the government.
- C. collected by a retail store from the customer who pays the tax included in the price of purchased goods. The store later files a tax return and forwards the tax takings to the government. (2)

1.3

Keitumetse's catering lunch pack has the following bread rolls (either white or brown) and white bread options to choose from:

- White Bread Roll (**WBR**)
- Brown Bread Roll (**BBR**) and
- White Bread (**WB**)
- Where EACH being either Toasted (**T**) or Not Toasted (**N**)



Use the information above to answer the questions that follow.

- 1.3.1 Identify the type of diagram illustrated above. (2)
- 1.3.2 Complete the missing labels (**H**) and (**Q**). (4)
- 1.3.3 Write down the total number of outcomes. (2)
- 1.3.4 Determine the number of bread rolls outcomes. (2)
- [30]**

QUESTION 2

2.1

Goitsemodimo is an insurance saleslady and earns a basic salary of R12 000 per month plus a commission. In September 2024 she expects to make R22 000 in commission plus R8 120 bonus.

Her monthly expenses are as follows:

- Rent = R 8 500
- Fuel = R2 500
- Electricity = R800
- Monthly gym membership = R350
- Car payment = R 4 600
- Insurance = R1 975
- Cell phone = R800
- Groceries = R3 000
- Entertainment = R1 700
- Water usage = R400

Use the information above to answer the questions that follow.

2.1.1 Use the provided ANSWER SHEET to construct Goitsemodimo's September 2024 budget. (6)

2.1.2 Express Goitsemodimo's:

(a) ratio of entertainment expenses to rent expenses in the form **1: ...** (2)

(b) variable expenses as a percentage of her basic salary. (4)

2.2

Goitsemodimo plans to purchase a FORD RANGER bakkie (light delivery vehicle) from her R1,25 million investment earnings. She received the following price quotation from a car dealer on 28 February 2024:

EXTRACT OF A PRICE QUOTATION FOR A BAKKIE FROM A DEALER:

	Rand (R)
Selling price (excluding VAT) without accessories (extras)	480 263,16
Discount	18 420,00
ACCESSORIES (EXTRAS)	PICTURE OF AN ACCESSORY
Towbar	 3 550,26
Rollbar	 3 500,00
Nudge bar/Bullbar cost and fitting (front fitted)	 6 898,25
Transaction fee	1 315,80
SUBTOTAL	477 107,47
VALUE-ADDED TAX	...%
TOTAL DUE	548 673,59

[Source: Group 1 Nissan and The Glen]

Use the information above to answer the questions that follow.

2.2.1 Define the word *price quotation* in the context above. (2)

2.2.2 Write R1,25 million in full, using numbers only. (2)

2.2.3 Calculate (rounded off to TWO decimal places) the percentage discount given on the bakkie's selling price, excluding VAT. (3)

2.2.4 Show with calculation how the amount of five hundred and forty-eight thousand six hundred and seventy-three rand and fifty-nine cents was determined. (3)

2.2.5 Give ONE reason why customers would prefer to install the accessory **Bullbar** as shown in the quotation. (2)

2.2.6 Goitsemodimo invested R1,25 million as follows:

- Thirty-three (33) months investment period.
- 6,7% interest per annum, compounded annually.

Show whether the **interest earned** on this investment is enough to purchase the bakkie. (9)

[33]

QUESTION 3

- 3.1 Virginia Health and Fitness Centre gives Spinning organised classes by three different instructors, Mpho, Andrea and Eve.

PICTURE OF A PERSON ON A SPINNING BICYCLE



[Source: <https://m.media-amazon.com>]

- **Mpho:** The evening group
- **Andrea:** A day group with 20 registered participants and
- **Eve:** The morning group has 8 registered participants.

ANNEXURE A shows the attendance records for the three groups over 18 days, as well as corresponding graphs representing the attendance for Mpho and Andrea's groups.

Note: The spinning studio may also be accessed by non-group or any member of the fitness centre beyond organised classes with no instructor leading spinning.

Use ANNEXURE A and the information above to answer the questions that follow.

- 3.1.1 State the best tool to collect respective data for attendance for the spinning groups. (2)
- 3.1.2 Determine the missing value, R, if the mean attendance for Mpho's group is 16. (4)
- 3.1.3 Determine for Andrea's group the: (3)
- (a) Median. (3)
 - (b) Interquartile range (IQR). (3)
- 3.1.4 Give ONE possible reason why Eve's group has full attendance on more days than Andrea's. (2)
- 3.1.5 Give ONE reason why on the box and whisker diagrams the attendance of Andrea's group only shows a lower whisker. (2)

- 3.2 The table below shows the number of children per province (in '000) living in the Republic of South Africa (RSA) in 2020 and 2021. Some values have been omitted.

TABLE 2: NUMBER OF CHILDREN IN RSA PER PROVINCE, 2020 and 2021

PROVINCE	Number of children (in thousands)		
	2020	2021	Percentage change
GP	A	4 417	– 4,08
WC	...	2 092	– 2,92
NW	...	1 439	– 0,96
LP	2 492	2 472	– 0,80
EC	2 569	2 554	– 0,58
KZN	4 300	4 302	0,05
NC	437	440	0,69
MP	1 710	1 722	0,70
FS	1 027	1 057	2,92
TOTAL	20 748	20 495	

[Adapted from www.childrencount.uct.ac.za]

NOTE

- The estimated population of RSA in 2021 is 60,14 million and children account for 34%.
- Children: a person under the age of 18.

Use the information above to answer the questions that follow:

- 3.2.1 Write down the province with the third-highest number of children in 2021. (2)
- 3.2.2 State whether the above provinces' percentage change for the number of children is arranged in *descending* or *ascending* order. (2)
- 3.2.3 Show with detailed calculation how the percentage change of 0,69% for NC was determined. (2)
- 3.2.4 Calculate the value of A, the number of children in GP in 2020. (4)
- 3.2.5 Determine, in millions, the difference between the number of children as shown in the table and the estimated population in 2021. (4)

[30]

QUESTION 4

4.1

Monowe is a 60-year-old nurse who started to work at Pelonomi Hospital on 1 January 1992. She contributed to the Govern Employee Pension Fund (GEPF) from 1 January 1992. She considered retirement on 31 December 2024 when her final salary per year will be R540 333.

She found the information and formula below, which the GEPF uses to calculate retirement pay-out packages.

GEPF NORMAL BENEFITS

Retiring with LESS THAN 10 YEARS of service	Retiring with MORE THAN 10 YEARS of service
You receive a once-off lump sum (gratuity).	Your benefits consist of two parts: • A once-off lump sum (gratuity) • A monthly pension called an annuity

The gratuity and annuity are calculated using the following formulae:

Gratuity = 6,72% × final salary per year × years of pensionable service

Annuity (per year)

$$= \left(\frac{1}{55} \times \text{final salary per year} \times \text{years of pensionable service} \right) + 360$$

[Source: GEPF Member Guide 2023]

Use the information above to answer the questions that follow.

4.1.1 State ONE benefit of contributing to GEPF. (2)

4.1.2 Calculate the total difference (rounded off to the nearest rand) of Monowe's gratuity if she extends her employment by another 4 years, it is when her salary will be R613 650. (6)

4.1.3 TABLE 3 below shows the income tax rates for the 2024/2025 tax year.

TABLE 3: 2024/2025 TAX YEAR RATES

TAXABLE INCOME (R)	RATES OF TAX (R)
R1–R237 100	18% of each R1 earned
R237 101–R370 500	R42 678 + 26% of the amount above R237 100
R370 501–R512 800	R77 362 + 31% of the amount above R370 500
R512 801–R673 000	R121 475 + 36% of the amount above R512 800

TAX REBATES 2024/2025

Primary (below 65)	R17 235
Secondary (65 and older)	R9 444
Tertiary (75 and older)	R3 145

[Source: www.sars.gov.za]

Calculate Monowe's monthly annuity after tax if she retires on 31/12/2024. (9)

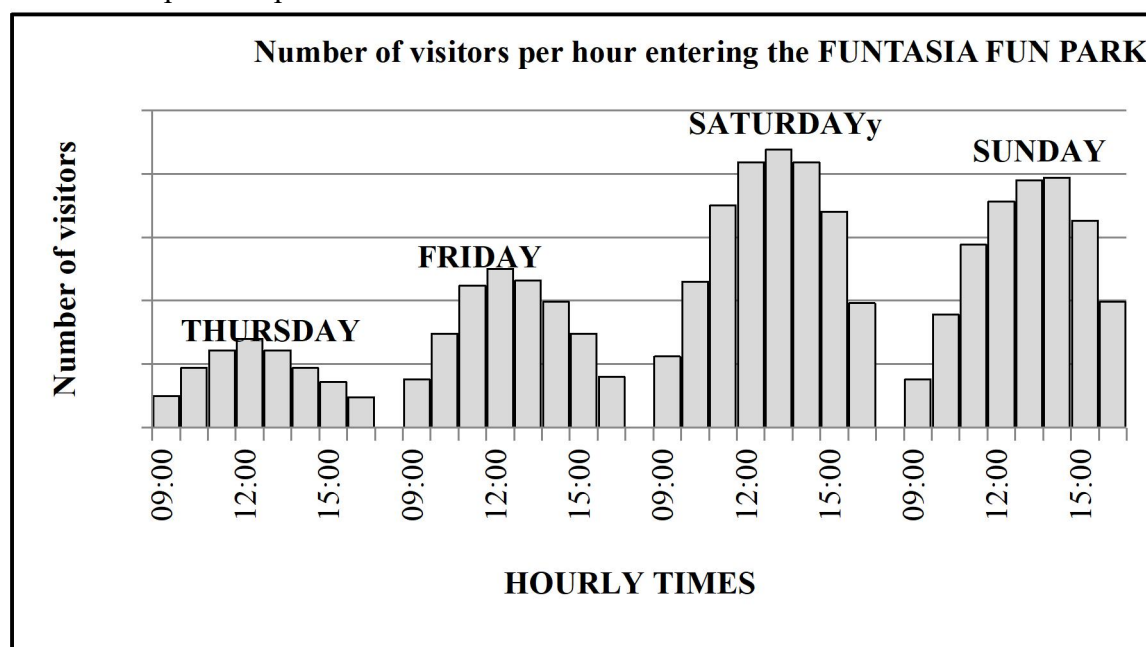
- 4.2 Monowe lives near FUNTASIA FUN PARK and RESTAURANT (FFPR) open for all ages' entertainment and refreshment.



The bar graphs below show the number of visitors per hour entering the FUNTASIA FUN PARK on four days of the week.

Note:

- On Mondays the park is not open.
- The park is open from 09:00 to 19:00.



[Adapted from <https://www.welkomcity.africa>]

Use the graph and information above to answer the questions that follow.

- 4.2.1 Identify the type of bar graph used to display the data. (2)
- 4.2.2 Name the items missing on the graph regarding (a) and (b) as directed below. (4)
- (a) Days.
- (b) Visitors
- 4.2.3 Describe a trend that relates to the number of visitors per hour entering the park. (2)

[25]

QUESTION 5

- 5.1 Table 4 below and the pie charts on ANNEXURE B show the United States of America (USA) light vehicle production and total world vehicle production shares.

TABLE 4: USA Light Vehicle Production and Total World Vehicle Production Shares, 2017

MANUFACTURER	SHARE OF USA PRODUCTION	SHARE OF WORLD PRODUCTION
Ford (FOR)	20%	6%
General Motors (GM)	18%	6%
Fiat Chrysler (FCA)	...	7%
Honda (HON)	11%	4%
Toyota (TOY)	11%	10%
Nissan (NIS)	8%	4%
Subaru (SUB)	3%	1%
Hyundai (HYU)	4%	7%
Kia (KIA)	2%	With Hyundai
Volkswagen (VW)	1%	7%
Other	...	48%
Total Production (Million Vehicles)	11,8	90,2

[Source: www.energy.gov / ward's automotive group]

Use the information above and ANNEXURE B to answer the questions that follow.

- 5.1.1 Determine the FCA share of United States of America production. (2)
- 5.1.2 Calculate the number of SUB vehicles produced in the USA. (2)
- 5.1.3 It is stated that three manufacturers contribute more than half of USA vehicle production. Verify the statement showing calculations. (3)
- 5.1.4 Identify the modal percentage in the world production share. (2)
- 5.1.5 The average production cost for a Toyota in 2017 was ¥ 1 870 500.

Calculate the rand value of the total world production in 2017.

Use: ¥ 1 = \$0,0069

R1 = \$0,054

(6)

- 5.2 Dukes owns a fleet of three passenger-type cabs (taxi cars) in the USA that he uses as Uber for transporting people according to the model of car needed.

Transportation is operated using TWO options as shown below.

Option 1:

UPFRONT fare = base fare (call-out fee) + (number of miles × per mile fare)

Option 2:

POST-TRIP fare = (number of minutes × per minute fare) + (number of miles × per mile fare)

TABLE 3 below shows the different passenger-type cars and their respective rates in CHICAGO for both UPFRONT and POST-TRIP fare options, including an example of a 10,5-mile trip using the UPFRONT fare option.

TABLE 3: RATES FOR TRANSPORT CARS BY TYPE IN CHICAGO FOR UPFRONT AND POST-TRIP FARE OPTIONS

COST	PASSENGER CAR BY TYPE		
	Hatchback	Sedan	SUV
Base fare (call-out fee)	\$0,00	\$ 18,00	\$22,87
Per minute fare	\$1,15	\$ 0,55	\$ 1,60
Per mile fare	\$1,90	\$ 4,05	\$ 7,85
*Minimum fare	\$14,98	\$15,00	\$40,00
Cancellation fee	\$5,00	\$10,00	\$15,00
Total fare (for a 10,5 - mile trip using the UPFRONT option)	\$19,95	\$60,53	UL

[Adapted from www.rideester.com/uber-rates,2023]

***Minimum fare:** the lowest fare one would be charged per trip.

Note: Uber is a transportation company with an APP that enables one to book a cab to get from point A to point B.

Use the information above to answer the questions that follow.

- 5.2.1 Calculate the missing value **UL**. (3)

- 5.2.2 Calculate (rounded off to the nearest mile) the maximum distance for which a person can use the Hatchback if you pay the minimum upfront fare. (4)

- 5.2.3 Explain the importance of a **cancellation fee** for the Uber service provider. (2)

- 5.2.4 The user travelled a 30-mile distance with Sedan. The post-trip fare option was used, and the trip took 1 hour and 45 minutes to complete.

The user stated that she would have saved more than \$20,00 if she had used the upfront fare option.

Show, with calculations, whether her statement is correct. (8)

[32]

TOTAL: 150

SURNAME:

NAME:

CLASS:

ANSWER SHEET

QUESTION 2.1.1

Goitsemodimo's budget for September 2024

INCOME in Rand (R)	
TOTAL	=

EXPENSES in Rand (R)	
TOTAL	=



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PREPARATORY EXAMINATION

GRADE 12

MATHEMATICAL LITERACY P1

ADDENDUM

SEPTEMBER 2024

This addendum consists of 3 pages with 2 annexures.

ANNEXURE A

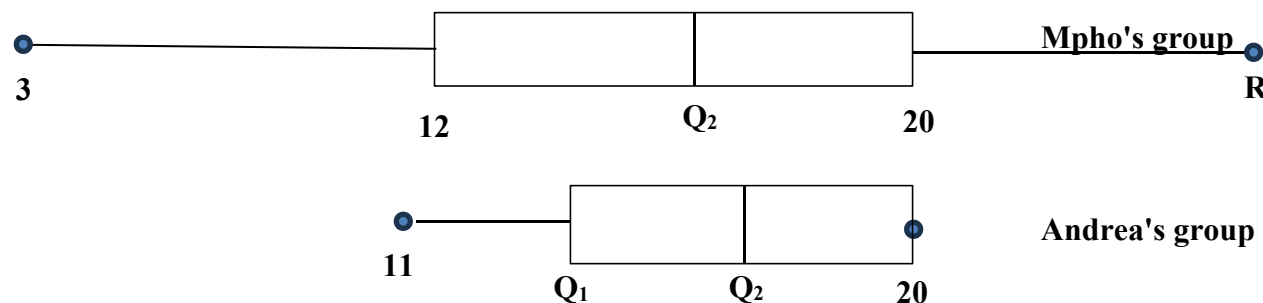
QUESTION 3.1

RECORDS OF ATTENDANCE FOR THREE GROUPS OVER A PERIOD OF 18 DAYS (D1–D18)

Mpho's group																	
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18
20	R	9	10	12	3	15	15	14	8	R	17	19	20	17	17	20	R
Andrea's group																	
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18
12	20	14	20	16	15	19	20	18	20	19	15	20	11	18	12	20	19
Eve's group																	
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18
7	8	8	6	8	6	7	8	8	6	6	7	8	8	8	8	7	8

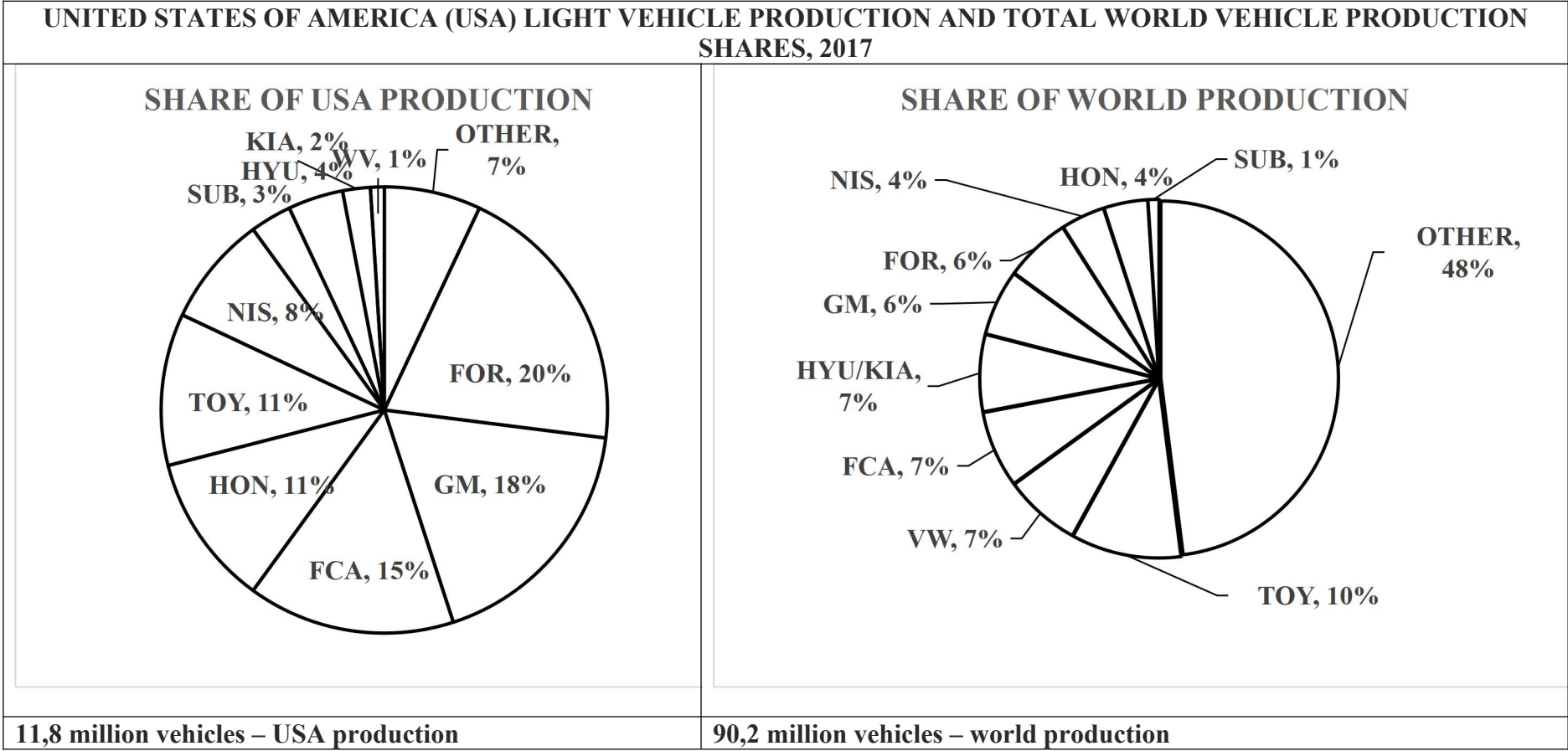
[Adapted from www.emorycommunityswimming.com]

BOX AND WHISKER DIAGRAMS REPRESENTING ATTENDANCE FOR MPHO and ANDREA GROUPS OVER 18 DAYS



ANNEXURE B

QUESTION 5.1



- NOTE:**
- Some information is omitted.
 - OTHER consist of several different types of vehicles contributing less than 1% each.



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PREPARATORY EXAMINATION/ *VOORBEREIDENDE EKSAMEN*

GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P1/ *WISKUNDIGE GELETTERDHEID V1*

23 SEPTEMBER 2024

MARKING GUIDELINE/ *NASIENRIGLYNE*

MARKS/*PUNTE*: 150

Symbol/ <i>Kode</i>	Explanation/ <i>Verduideliking</i>
M	Method/ <i>Metode</i>
MA	Method with accuracy/ <i>Metode met akkuraatheid</i>
CA	Consistent accuracy/ <i>Volgehoue akkuraatheid</i>
A	Accuracy/ <i>Akkuraatheid</i>
C	Conversion/ <i>Herleiding</i>
S	Simplification/ <i>Vereenvoudiging</i>
RT	Reading from a table/graph/document/diagram/ <i>Lees vanaf tabel/grafiek/dokument/diagram</i>
SF	Correct substitution in a formula/ <i>Korrekte vervanging in 'n formule</i>
O	Opinion/Explanation/ <i>Opinie/Verduideliking</i>
P	Penalty, e.g. for no units, incorrect rounding off, etc./ <i>Penalisasie, bv. vir geen eenhede, verkeerde afronding, ens.</i>
R	Rounding off/ <i>Afronding</i>
NPR	No penalty for rounding/ <i>Geen penalisasie vir afronding nie</i>
AO	Answer only/ <i>Slegs antwoord</i>
MCA	Method with consistent accuracy/ <i>Metode met volgehoue akkuraatheid</i>
RCA	Rounding consistent with accuracy/ <i>Afronding met volgehoue akkuraatheid</i>

**This marking guideline consists of 21 pages/
*Hierdie nasienriglyne bestaan uit 21 bladsye.***

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- Note: Consistent accuracy (CA) does NOT apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose ONE mark only.

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Let wel: Volgehoue akkuraatheid (CA) geld NIE in die geval van 'n afbreuk NIE.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem het en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *'n Algemene nasienbeginsel is dat, indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, die kandidaat slegs EEN punt verloor.*

QUESTION PAPER SHOULD BE MARKED OUT OF 142

[illegible]

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
1.2.3	9,5% ✓✓RT	2RT correct percentage NPU (2)	F L1 E
1.2.4	Total cost/ <i>Totale koste</i> ✓RT = R942,50 × 12 = R11 310,00 ✓A	1RT using R942,50 1A correct answer (2)	F L1 E
1.2.5	Discount/ <i>Afslag</i> = R10 099 × $\frac{10}{100}$ ✓MA = R1 009,90 ✓A	1MA calculating 10% 1A discount amount [accept R1 009,9/R1 010] (2)	F L1 E
1.2.6	C ✓✓A Accept: ✓✓A Collected by a retail store from the customer who pays the tax included in the price of purchased goods. The store later files a tax return and forwards the tax takings to the government.	2A correct choice (2)	F L1 M
1.3.1	✓✓ A Tree diagram/ <i>Boomdiagram</i>	2A correct name (2)	P L1 E
1.3.2	✓✓A H = White Bread Roll / <i>Witbroodrolletjie</i> / WBR ✓✓A Q = White Bread Toasted/ <i>Witbrood Gerooster</i> /WBT	2A correct label 2A correct label (4)	P L1 E/M
1.3.3	Six/ <i>Ses</i> / 6 ✓✓A Listing all 6 correct outcomes (½)	2A total number of outcomes (2)	P L1 E
1.3.4	Four/ <i>vier</i> / 4 Listing all 4 correct outcomes (½)	2A correct number of outcomes (2)	P L1 M

QUESTION/VRAAG 2		[33 MARKS/PUNTE]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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2.1.1	Goitsemodimo's budget for September 2024		F L2 E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	<table><tr><th colspan="2">INCOME in Rand (R)</th></tr><tr><td>Basic Salary/ <i>Basiese Salaris</i></td><td>12 000</td></tr><tr><td>Commission/ <i>Kommisie</i></td><td>22 000</td></tr><tr><td>Bonus</td><td>8 120</td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td colspan="2"></td></tr><tr><td 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Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
2.1.2 (a)	$\frac{1\ 700}{8\ 500} \times 100\%$ $= 19,76\%$	1MA correct amounts in the correct order 1CA simplification AO	F L2 E
2.1.2 (b)	Variable expenses' sum/ <i>Veranderlike uitgawes se som</i> Fuel/ <i>Brandstof</i> = R2 500 Electricity/ <i>elektrisiteit</i> = R800 cellphone / <i>Selfoon</i> = R800 Groceries/ <i>kruideniers</i> = R3 000 Entertainment/ <i>Vermaak</i> = R1 700 Water usage/ <i>water gebruik</i> = R400 Total variable expenses = R9 200 $\frac{9\ 200}{12\ 000} \times 100\%$ $= 76,67\%$ If Cell phone is regarded as a fixed cost: Accept as below: $\frac{8\ 400}{12\ 000} \times 100\%$ $= 70\%$	1A numerator 1A denominator 1M percentage 1CA answer AO NPR	F L2 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
2.2.1	✓✓A A price quotation is a document stating ALL expected financial costs of the Ford bakkie./'n Pryskwotasie is 'n gedrukte dokument wat ALLE verwagte finansiële koste van die Ford-bakkie aandui OR/OF ✓✓A Price Quotation is a type of document that provides a expected fixed/unchanged price or cost for purchasing a bakkie./Pryskwotasie is 'n tipe dokument wat 'n verwagte vaste/onveranderde prys of koste verskaf vir die aankoop van 'n bakkie OR/OF ✓✓A Price quotation is a detailed statement showing various items and their expected costs amounting to a particular amount for buying a bakkie./Dit is 'n gedetailleerde staat wat verskeie items en hul verwagte koste toon wat 'n bepaalde bedrag vir die aankoop van 'n bakkie beloop OR/OF ✓✓A Price quotation is a type of document that provides an expected fixed price or cost for buying the bakkie./Pryskwotasie: 'n tipe dokument wat 'n verwagte vaste prys of koste verskaf vir die aankoop van die bakkie. OR/OF ✓✓A Price quotation is a document enlisting available Ford bakkie items and their expected costs. OR/OF A documented commitment from the seller to the buyer offering the bakkie and accessories at a fixed price.	2A correct wording.	F L1 E

(2)

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
2.2.2	$\checkmark\checkmark A$ R1 250 000 OR/OF 1 250 000	2A correct number (2)	F L1 E
2.2.3	Discount percentage/ <i>Afslag persentasie</i> $= \frac{R18\,420,00}{R480\,263,16} \times 100\%$ $= 3,835397243$ $= 3,84\% \checkmark R$	1RT numerator 1RT denominator 1R rounding % to two decimal places. AO (3)	F L2 M
2.2.4	VAT/ <i>BTW</i> $= \frac{15}{100} \times R477\,107,47$ $= R71\,566,1205$ Total due/ <i>Bedrag verskuldig</i> $= R477\,107,47 + R71\,566,12$ $= R548\,673,59$ OR/OF $\text{Total due} = \frac{115}{100} \times R477\,107,47$ $= R548\,673,59$	1RT reading R477 107,47 1A VAT amount 1MA adding correct values 1RT reading R477 107,47 1MA increased % (115) 1MA using 115% (3)	F L2 E

Q/V	Solution/Oplissing	Explanation/Verduideliking	TL
2.2.5	✓✓ O To protect the front of the bakkie/<i>om die voorkant van die bakkie te beskerm</i> OR/OF ✓✓ O Protects the vehicle's radiator/grille/surrounding area./<i>Beskerm die voertuig se verkoeler/rooster/omringende area</i> OR/OF ✓✓ O Protection of body – avoiding any nasty scratches or dents to the body front/ <i>Beskerming van raamwerk - vermy enige nare skrape of duike aan die voorkant van die raamwerk</i> OR/OF ✓✓ O Keep the engine bay safe./<i>Beskerm die enjinkompartement</i> OR/OF ✓✓ O Enhance the vehicle's look/<i>Bevorder die voertuig se aansig</i> OR/OF ✓✓ O Provide a bakkie with a sleeker/richer finish or look./<i>Voorsien 'n bakkie van 'n belynde/beter afwerking of voorkoms</i> OR/OF ✓✓ O For safety reasons/as a safety feature/<i>Vir veiligheidsredes/as 'n veiligheidskenmerk</i> OR/OF ✓✓ O Beautification of the bakkie./<i>Verfraaiing van die bakkie</i> OR/OF ✓✓ O Durability/longer lasting/general protection./<i>Duursaamheid/langduriger/algemene beskerming</i>	20 protection of front parts 20 protection 20 security reason 20 security reason 20 beauty 20 beauty reason 20 safety reason 20 beauty looking reason. 20 durability reason	F L4 E (2)

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	TL
2.2.6	33 months/<i>maande</i> = 2 yrs 9 mnths ✓ C Interest 1st year/<i>Rente 1^{ste} jaar:</i> = $\frac{6,7}{100} \times R\ 1\ 250\ 000$ ✓ MA = R 83 750 ✓ CA Year 1 total = R1 250 000 + 83 750 = R1 333 750 ✓ CA Interest 2nd year/<i>Rente 2^{de} jaar:</i> = $\frac{6,7}{100} \times R1\ 333\ 750$ = R 89 361,25 Year 2 total/<i>Jaar 2 totaal</i> = R1 333 750 + R 89 361,25 = R1 423 111,25 ✓ CA Interest for 9 months/<i>rente vir 9 maande</i> $\frac{6,7}{100} \times \frac{9}{12} \times R1\ 423\ 111,25$ ✓ M = R71 511,34 ✓ CA Total interest earned/<i>Totale rente verdien</i> = R 83 750 + R 89 361,25 + R71 511,34 = R244 622,59 ✓ CA OR/OF	CA 1,25 million from 2.2.2 1C conversion to years and months 1MA calc. interest for year 1 1CA 1st year interest 1CA total for year 1 1CA total year 2 1M calc. % for 9 months 1CA interest for 9 months 1CA total interest	F L4 D

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
	Interest for 9 months/ <i>rente vir 9 maande</i> $\frac{6,7}{100} \times \frac{9}{12} \times \overset{\checkmark}{\text{M}} \text{ R1 423 111,25}$ = R71 511,34 $\checkmark$ CA 9 months total/9 maande totaal = R1 423 111,25 + R71 511,34 = R1 494 622,59 Total interest earned/<i>Totale rente verdien</i> = R1 494 622,59 – R1 250 000 = R244 622,59 $\checkmark$ CA $\checkmark$ O $\therefore$ Interest is not enough/sufficient./is less than R480 263,16/less than the selling price of a bakkie./<i>Rente is nie genoeg/voldoende nie./is minder as R480 263,16/minder as die verkoopprys van 'n bakkie.</i> OR/OF	1M calc. % for 9 months 1CA interest for 9 months 1CA total interest 1O conclusion	
		(9)	

	33 months/<i>maande</i> = 2 yrs 9 mnths ✓ C Interest 1st year/Rente 1^{ste} jaar: $= \frac{6,7}{100} \times R1,25 \text{ million} \quad \checkmark \text{ MA}$ $= R0,08375 \text{ million} \quad \checkmark \text{ CA}$ Year 1 total $= R1,25 + R0,08375$ $= R1,33375 \text{ million} \quad \checkmark \text{ CA}$ Interest 2nd year/ Rente 2^{de} jaar: $= \frac{6,7}{100} \times R1\,333\,75$ $= R0,089\,36125 \text{ million}$ Year 2 total/Jaar 2 totaal $= R1,33375 + R0,089\,36125$ $= R1,42311125 \quad \checkmark \text{ CA}$ Interest for 9 months/ rente vir 9 maande $\frac{6,7}{100} \times \frac{9}{12} \times R1,42311125 \quad \checkmark \text{ M}$ $= R0,07151134031 \text{ million} \quad \checkmark \text{ CA}$ Total interest earned/Totale rente verdien $= R0,08375 + R0,08936125 + R0,07151134031$ $= R0,2446225903 \approx R0,244 \text{ million} \quad \checkmark \text{ CA}$ OR/OF	1C conversion to years and months 1MA calc. interest for year 1 1CA 1st year interest 1CA total for year 1 1CA total year 2 1M calc. % for 9 months 1CA interest for 9 months 1CA total interest	

[illegible]

QUESTION/VRAAG 3		[30 MARKS/PUNTE]	
Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
3.1.1	✓✓ A Observation/Waarneming	2A correct tool (2)	D L1 E
3.1.2	Value of R/ Waarde van R = $16 = \frac{\checkmark \text{ MA } 216 + 3\mathbf{R}}{18 \checkmark \text{ M}}$ $16 \times 18 = 216 + 3\mathbf{R}$ $288 - 216 = 3\mathbf{R} \checkmark \text{ M}$ $72 = 3\mathbf{R}$ $\mathbf{R} = 24 \checkmark \text{ CA}$	1MA adding value 1M concept of mean 1M changing subject 1CA value of R AO (4)	D L2 M
3.1.3 (a)	$11 \ 12 \ 12 \ 14 \ 15 \ 15 \ 16 \ 18 \ 18 \ 19 \ 19 \ 19 \ 20 \ 20 \ 20 \ 20 \ 20 \ 20$ $\text{Median/mediaan} = \frac{18+19}{2} \checkmark \text{ M}$ $= 18,5 \checkmark \text{ CA}$	1MA arranging values 1M adding middle values and dividing by 2 1CA simplification $\begin{array}{l} \text{Unarranged data} \\ \checkmark \text{ M} \\ \frac{18+20}{2} = 19 \checkmark \text{ CA} \end{array}$ (3)	D L2 M
3.1.3 (b)	$Q_1 = 15 \checkmark \text{ A}$ $\text{IQR} = Q_3 - Q_1 \checkmark \text{ A}$ $= 20 - 15$ $= 5 \checkmark \text{ CA}$	CA from 3.1.3 (a) 1A value of Q1 1A IQR concept (Formula) 1CA IQR value (3) $\begin{array}{l} \text{Unarranged data} \\ Q_1 = 16 \checkmark \\ \text{IQR} = Q_3 - Q_1 \checkmark \\ = 20 - 16 \\ = 4 \checkmark \quad (3/3) \\ \text{If} \\ \text{IQR} = 11 - 16 \\ = -5 \text{ (0 marks, break down } \Rightarrow \text{ stop marking)} \end{array}$	D L3 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
3.1.4	✓✓O Small groups of participants ensure a feeling of togetherness./Klein groepe deelnemers verseker 'n gevoel van samehorigheid. OR/OF ✓✓O Participants are able do morning classes before they go to work./Deelnemers is afgetrede senior burgers of doen nie dagwerk nie en het geen oggendtakies of verpligtinge nie OR/OF ✓✓O It's part of starting the day./Dit is deel van die begin van die dag. OR/OF ✓✓O During the day people may be committed due to planned or unplanned reasons/ Gedurende die dag kan mense toegewyd wees weens beplande of onbeplande redes OR/OF ✓✓O Some people may only come when they have a day off./Sommige mense sal dalk net kom wanneer hulle 'n dag af het. OR/OF Any reason making sense./Enige sinvolle argument.	20 reason (2)	D L4 E
3.1.5	✓✓O The maximum value is the same as quartile 3./Die maksimum waarde is dieselfde as kwartiel 3. OR/OF ✓✓O Attendance remained the same from the 75th percentile./Bywoning het dieselfde gebly vanaf die 75ste persentiel	20 reason (2)	D L4 M

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
3.2.1	EC/Eastern Cape/ <i>Oos-Kaap</i> ✓✓ A	2A correct province (2)	D L1 M
3.2.2	✓✓ A Ascending/ <i>Stygend</i> .	2A ascending. (2)	D L1 M
3.2.3	Percentage Change/ <i>Persentasie verandering</i> $= \frac{440 - 437}{437} \times 100\% \checkmark \text{MA}$ $= 0,69\%$	1A numerator and denominator 1MA percentage calculation (2)	D L2 E
3.2.4	$100\% - 4,08\% = 95,92\% \checkmark \text{MA}$ $A = \frac{100\% \checkmark A}{95,92\%} \times 4\,417 \checkmark \text{RT}$ $= 4\,604,879066$ $= 4\,604 \text{ or } 4\,605 \checkmark \text{CA}$	1MA calculating 95,92% 1A numerator and denominator 1RT correct value (4 417) 1CA simplification (4)	D L3 M
3.2.5	Estimated/ <i>geskatte</i> $= \frac{34}{100} \times 60,14 \text{ million} \checkmark \text{MA}$ $= 20,4476 \text{ million/miljoen} \checkmark A$ Number in table/ <i>Aantal in tabel</i> $= \frac{20\,495}{1\,000}$ $= 20,495 \checkmark C \text{ million/miljoen}$ Difference/ <i>verskil</i> $= 20,495 \text{ million/mil} - 20,4476 \text{ million/mil}$ $= 0,0474 \text{ million/miljoen} \checkmark \text{CA}$	1MA calculating 34% 1A simplification 1C converting table value 1CA difference (4)	D L3 M
		[30]	

[illegible]

If learners work with 32 and 36 (allocate 5/6) Pensionable service period/<i>Pensioendraende dienstydpark:</i> 2024 – 1992 = 32 yrs. Gratuity/<i>Gratifikasie</i> = 6,72% × final salary per year × years of pensionable service/<i>finale salaris per jaar × jaar pensioendraende diens</i> = 6,72% × R540 333 × 32 ✓ SF = R1 161 932,0832 ✓ S 4 years later/<i>4 jaar later</i> = 36 yrs Gratuity/<i>Gratifikasie</i> ✓ MCA = 6,72% × R613 650 × 36 = R1 484 542,08 Difference/<i>verskil</i> = R1 161 932,10 – R1 484 542,08 = R322 609,98 ✓ CA ≈ R322 610 ✓ R		
--	--	--

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verdui</i>	T/ L
4.1.3	Annuity (p.a.)/<i>Annuïteit (p.j.)</i> $= \left(\frac{1}{55} \times \text{final salary} \times \text{years of pensionable service}\right) + 360$ $= \left(\frac{1}{55} \times \text{R540 333} \times 33\right) + 360 \quad \checkmark \text{SF}$ $= \text{R324 559,80} \quad \checkmark \text{CA}$ Tax payable per annum/<i>Belasting betaalbaar p.j.</i> $= \text{R42 678} + 26\% \times (\text{R324 559,80} - \text{R237 100}) \quad \checkmark \text{MA} \quad \checkmark \text{SF}$ $= \text{R42 678} + \text{R22 739,55}$ $= \text{R65 417,55} \quad \checkmark \text{CA}$ $= \text{R65 417,55} - \text{R17 235}$ $= \text{R48 182,55} \quad \checkmark \text{CA}$ Annuity after tax/<i>Annuïteit na belasting</i> $= \text{R324 559,80} - \text{R48 182,55}$ $= \text{R276 377,25} \quad \checkmark \text{CA}$ Monthly annuity/<i>Maandelikse annuïteit</i> $= \text{R276 377,25} \div 12 \quad \checkmark \text{MA}$ $= \text{R23 031,44} \quad \checkmark \text{CA}$	CA from 4.1.2 1SF substituting correct values 1CA simplification 1MA correct tax bracket 1SF correct substitution 1CA tax before rebate 1CA tax after rebate 1CA simplification 1MA divided by 12 1CA monthly income after tax (9)	F L3 D

	If learners work with 32 years (9/9) Annuity (p.a.)/<i>Annuïteit (p.j.)</i> $= \left(\frac{1}{55} \times \text{final salary} \times \text{years of pensionable service} \right) + 360$ $= \left(\frac{1}{55} \times R540\,333 \times 32 \right) + 360 \quad \checkmark \text{SF}$ $= R314\,735,5636 \approx R314\,735,56 \quad \checkmark \text{CA}$ Tax payable per annum/<i>Belasting betaalbaar p.j.</i> $= R42\,678 + 26\% \times (R314\,755,56 - R237\,100) \quad \checkmark \text{MA} \quad \checkmark \text{SF}$ $= R42\,678 + R20\,190,45$ $= R62\,868,45 \quad \checkmark \text{CA}$ $= R62\,868,45 - R17\,235$ $= R45\,633,45 \quad \checkmark \text{CA}$ Annuity after tax/ <i>Annuïteit na belasting</i> $= R314\,735,56 - R45\,633,45$ $= R269\,102,11 \quad \checkmark \text{CA}$ Monthly annuity/<i>Maandelikse annuïteit</i> $= R269\,102,11 \div 12 \quad \checkmark \text{MA}$ $= R22\,425,18 \quad \checkmark \text{CA}$	1SF substituting correct values 1CA simplification 1MA correct tax bracket 1SF correct substitution 1CA tax before rebate 1CA tax after rebate 1CA simplification 1MA divided by 12 1CA monthly income after tax	
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Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verdui</i>	T/L
4.2.1	✓✓A Compound/ Multiple bar/ <i>saamgestelde/ Meervoudige</i>	2A compound/multiple (2)	D L1 E
4.2.2	✓✓A (a) No Data for Tuesday and Wednesday/ <i>Geen data vir Dinsdag en Woensdag nie</i> ✓✓A (b) no stats reflected the number of visitors in a park from/<i>geen statistieke weerspieël die aantal besoekers in 'n park vanaf nie 17:00–19:00</i> - No numbers on the vertical axis/<i>Geen getalle op die vertikale as nie</i> OR/OF - No bars from 17:00–19:00/<i>Geen stawe vir 17:00–19:00</i>	2A two days left out. 2A hours not having visitors' stats. (4)	D L4 M
4.2.3	✓O The number of visitors increases to about 12:00. on weekdays and then decrease again till 16:00. ✓O <i>Die aantal besoekers neem toe tot ongeveer 12:00. op weekdae en verminder dan weer tot 16:00.</i> OR/OF ✓O The number of visitors increases to about 13:00 on weekends and then decreases again till 16:00. ✓O <i>Die aantal besoekers neem toe tot ongeveer 13:00 oor naweke en neem dan weer af tot 16:00.</i>	1O increase and time period 1O decrease and time period (2)	D L4 D
		[25]	

QUESTION/VRAAG 5		[32 MARKS/PUNTE]	
Q/V	Solution/Oplossing	Explanation/Verduidelik	T/L
5.1.1	FCA share of USA production/<i>FCA-aandeel van VSA-produksie</i>: $= 100\% - (11 + 11 + 8 + 3 + 4 + 2 + 1 + 7 + 20 + 18) \%$ $= 100\% - 85\% \checkmark \text{ MA}$ $= 15\% \checkmark \text{ A}$	1MA subtracting correct values from 100% 1A percentage AO NPU (2)	D L2 E
5.1.2	$\text{SUV} = \frac{3}{100} \times 11\,800\,000 \checkmark \text{ MA}$ $= 354\,000 \checkmark \text{ CA}$ OR/OF $\text{SUV} = \frac{3}{100} \times 11,8 \text{ million} \checkmark \text{ MA}$ $= 0,354 \text{ million} \checkmark \text{ CA}$	1MA calculating 3% 1CA total vehicles AO NPU (2)	D L2 E
5.1.3	Contribution/<i>Bydrae</i> $= 20\% + 18\% + 15\% \checkmark \text{ MA}$ $= 53\% \checkmark \text{ A}$ $\checkmark \text{ O}$ The statement is VALID/<i>Vervolgens is die stelling WAAR.</i>	MCA from 5.1.1 1MA adding correct percent 1A simplification 1O conclusion (3)	D L4 M
5.1.4	7% $\checkmark \checkmark \text{ A}$	2A correct value NPU (2)	D L2 E

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
5.1.5	Number of toyota vehicles $= \frac{10}{100} \times 90,2 \text{ million/milj}$ $= 9,02 \text{ million/milj} \checkmark \text{ A}$ Amount in Japanese Yen (¥) $= 9,02 \times \text{¥}1\,870\,500$ $= \text{¥}16\,871\,910 \text{ million/milj} \checkmark \text{ CA}$ Amount in dollars (\$) $\text{¥}1 = \$0,0069$ $= 16\,871\,910 \times 0,0069 \checkmark \text{ C}$ $= \$116\,416,179 \text{ million/milj} \checkmark \text{ CA}$ Amount in rands (R) $\text{R}1 = \$0,054$ $= \frac{\$116\,416,179}{0,054} \checkmark \text{ C}$ $= \text{R}2\,155\,855 \text{ million/milj} \checkmark \text{ CA}$ OR/OF	1A number of vehicles 1CA amount in Yen 1C converting to \$ 1CA amount in \$ 1C convert to rand. 1CA amount in rands	F L 3 D

For 1 vehicle ¥1 = \$0,0069 Amount in dollars (\$) $1\,870\,500 \times 0,0069$ ✓ C = \$12 906,45 ✓ CA Amount in rands (R) R1 = \$0,059 $= \frac{12\,906,45}{0,054}$ ✓ C = R239 008,33 ✓ CA Number of toyota vehicles $= \frac{10}{100} \times 90,2 \text{ million/milj}$ = 9,02 million/milj ✓ A Total amount = $9,02 \times R239\,008,33$ = R2 155 855,14 million ✓ CA	1C convert to \$ 1CA amount in \$ 1C convert to rand 1CA amount in rands 1A number of vehicles 1CA simplification (6)
--	--

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
5.2.1	$UL = \text{Base fare} + 10,5 \times \text{Cost per mile/}$ $\text{Basistarief} + 10,5 \times \text{Koste per myl}$ $= \$22,87 + (10,5 \times \$7,85)$ $= \$105,295 \checkmark \text{ CA}$ $\approx \$105,30$	1RT using correct values. 1MA multiplying and adding. 1CA value of UL AO NPU (3)	F L2 M
5.2.2	UPFRONT fare = base fare (call-out fee) + (number of miles $\times$ per mile fare) $\$14,98 = 00 + (n \times \$1,90) \text{ where } n = \text{number of miles}$ $n = \frac{14,98}{1,90} \checkmark \text{ MA}$ $= 7,88421052631 \checkmark \text{ CA}$ $\approx 8 \checkmark \text{ R}$	1SF correct substitution 1MA changing subject of the formula 1CA simplification 1R rounding (4)	F L2 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
5.2.3	To cover the cost for wasted time/ idle when a vehicle could have been used to assist someone when you cancel the booking./Om die koste te dek vir ledige/Vermorste tyd wanneer 'n voertuig gebruik kon word om iemand by te staan wanneer jy die bespreking kanselleer. OR/OF ✓✓ O Penalty/Fine for booking made if one does not finally use the vehicle (or time wasting)./Boete/boete vir bespreking gemaak as mens nie uiteindelik die voertuig gebruik nie (of tyd mors) OR/OF ✓✓ O Prevent Prank/HOAX/fraudster calls./ Voorkom HOAX/bedrieër-oproepe OR/OF ✓✓ O Cover petrol and wear and tear of the vehicle/Vir petrol en slytasie van die voertuig OR/OF ✓✓ O Recovering company costs or company make a profit/and loss/Vir die verhaal van maatskappykoste of maatskappy maak 'n wins/en verlies	20 reason	F L4 E

(2)

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
5.2.4	Time in minutes 1 hr 45 min = 60 min + 45 min = 105 min ✓ C Post-trip cost/<i>Na-reiskoste</i>: = (105 min × \$0,55 per min) + (30 miles × \$4,05) ✓ SF = \$57,75 + \$121,5 ✓ MA = \$179,25 ✓ CA Upfront cost/<i>Vooraf koste</i>: = \$18 + (30 miles × \$4,05 per mile) ✓ SF = \$139,50 ✓ CA Difference/<i>verskil</i> = \$179,25 – \$139,50 = \$39,75 ✓ CA The statement is correct/<i>Die stelling is korrek</i> ✓ O	1C converting to minutes. 1SF correct substitution 1MA adding values 1CA post trip cost 1SF correct substitution 1CA upfront trip cost 1CA difference 1O conclusion	F L4 D
		(8)	
		[32]	
		TOTAL/TOTAAL: 150	

Scaling the whole paper

$$\frac{\text{Learner total}}{142} \times 150$$

PREPARATORY EXAMINATION

2024

10601
MATHEMATICAL LITERACY
(PAPER 1)

MATHEMATICAL LITERACY: Paper 1



10601E

TIME: 3 hours

MARKS: 150

11 pages and an addendum with 7 annexures

X05



INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:
 - ANNEXURE A for QUESTION 3.1
 - ANNEXURE B for QUESTION 4.1
 - ANNEXURE C for QUESTION 4.2
 - ANNEXURE D for QUESTION 4.3
 - ANNEXURE E for QUESTION 4.3
 - ANNEXURE F for QUESTION 5.2
 - ANNEXURE G for QUESTION 5.3
3. Number your answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
6. Show ALL calculations clearly.
7. Round-off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Write neatly and legibly.

QUESTION 1

- 1.1 Sally Harley, a marketing executive, works from Mondays to Fridays from 07:00 to 15:00 at the Johannesburg Zoo, where she promotes the Joburg Zoo.

Her salary advice for the month of July 2024 is displayed below.

SALARY ADVICE																															
		JHB Zoo Jan Smuts Avenue Parkview Johannesburg																													
Employment date: 2018-06-23 Pay period: 2024-07-31 Worked days: 26		Employee's Name: Sally Harley ID Number: 9206304998076 Designation: Marketing Executive Department: Marketing																													
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #cccccc;"> <th style="width: 35%;">INCOME</th> <th style="width: 15%;">AMOUNT</th> <th style="width: 35%;">DEDUCTIONS</th> <th style="width: 15%;">AMOUNT</th> </tr> </thead> <tbody> <tr> <td>Basic salary</td> <td>R18 500</td> <td>Provident fund</td> <td>R1 200</td> </tr> <tr> <td>Travelling allowance</td> <td>R2 500</td> <td>PAYE</td> <td>R2 186,78</td> </tr> <tr> <td>Housing rental allowance</td> <td>R3 000</td> <td>Medical aid</td> <td>R1 390</td> </tr> <tr> <td>Meal allowance</td> <td>R2 100</td> <td></td> <td></td> </tr> <tr> <td>Gross income</td> <td>R26 100</td> <td>Total deductions</td> <td>A</td> </tr> <tr> <td></td> <td></td> <td>Nett Salary</td> <td>B</td> </tr> </tbody> </table>				INCOME	AMOUNT	DEDUCTIONS	AMOUNT	Basic salary	R18 500	Provident fund	R1 200	Travelling allowance	R2 500	PAYE	R2 186,78	Housing rental allowance	R3 000	Medical aid	R1 390	Meal allowance	R2 100			Gross income	R26 100	Total deductions	A			Nett Salary	B
INCOME	AMOUNT	DEDUCTIONS	AMOUNT																												
Basic salary	R18 500	Provident fund	R1 200																												
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Housing rental allowance	R3 000	Medical aid	R1 390																												
Meal allowance	R2 100																														
Gross income	R26 100	Total deductions	A																												
		Nett Salary	B																												

Use the information above to answer the questions that follow.

- 1.1.1 Define the term *gross income* in context. (2)
- 1.1.2 Write down the gross income amount in words. (2)
- 1.1.3 Provide the month in which the salary advice was issued. (2)
- 1.1.4 Determine the missing values of **A** and **B**. (4)
- 1.1.5 Determine Sally's age, in years and months, on the date that she receives this payment. (2)
- 1.1.6 Write down the term PAYE in full. (2)

- 1.2 Sally is planning to visit her family in Sweden during December to experience a white Christmas. She decided to save up her travel and meal allowances for one year to ensure that she will have enough money for meals, transportation, and entertainment. The current exchange rate is 1,82 ZAR (South African Rand) for 1 SEK (Swedish Krona)

Use the information above to answer the questions that follow.

1.2.1 Between the two countries, which currency is stronger? (2)

1.2.2 Convert 28 573 South African Rand to Swedish Krona. (2)

- 1.3 The table below contains a list of explanations and definitions of concepts used in Mathematical Literacy. Match the word(s) given with the appropriate description from the table. Write only the correct letter (A–G) next to the question numbers (1.3.1 to 1.3.4) e.g. 1.3.5 H

Table 1: Definitions of concepts

A	The set of data includes all values
B	A company that collects taxes on behalf of the government
C	The sum of all values divided by the number of values
D	The number that appears the most in a set of data
E	A table that is used to calculate personal income tax for individuals
F	This set of data contains whole numbers only.
G	The number in the middle, after an odd data set is arranged in chronological order

1.3.1 Median (2)

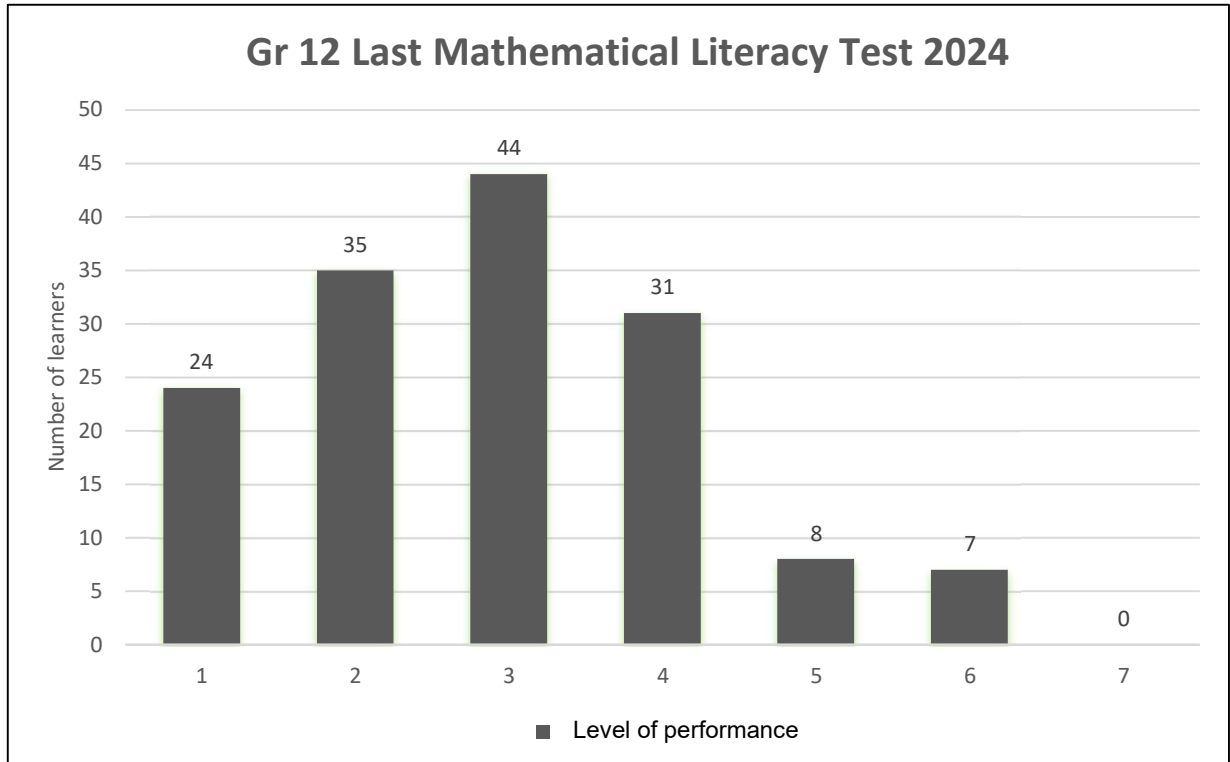
1.3.2 SARS (2)

1.3.3 Mode (2)

1.3.4 Discrete data (2)

- 1.4 Below is a graph that represents the level of performance of the learners from Jabulani Secondary School for the last test that was done at the beginning of August 2024.

The performance is represented by levels 1 to 7.



Level 1 : 0 – 29%
 Level 2 : 30 - 39%
 Level 3 : 40 – 49%
 Level 4 : 50 – 59%
 Level 5 : 60 – 69%
 Level 6 : 70 – 79%
 Level 7 : 80 – 100%

- 1.4.1 Identify the type of graph that is used to represent this data. (2)
- 1.4.2 Determine the level where no learner achieved. (2)
- [30]**

QUESTION 2

2.1

Mr and Mrs De Klerk plan to renew their wedding vows at the Ennyani wedding venue. They are comparing the costs of a weekday and a weekend package. They plan to invite 42 couples and 12 single people. (The singles include Mr De Klerk's mother and Mrs De Klerk's father, who are retired and over 65 years old, 4 children under the age of 5, and 6 children above 5 years old). The table below indicates the prices for the Ennyani wedding venue on Monday to Thursday and on a Saturday and Sunday.

Table 2: Extract from a budget for a wedding venue

	Days of the week		
	Saturday	Sunday	Monday – Thursday
Venue hire	R15 650	R13 450	R0
Price per person	R 432	R432	R515
Minimum number of guests	50	40	40
Maximum number of guests	100	100	100

[Adapted from <https://www.ennyani.co.za/wedding-venues/calculator>]

NOTE:

All prices include 15% VAT.

Children under the age of 5 pay 25% of the price per person as they do not eat as much.

Children above the age of 5 pay full price.

Pensioners above the age of 65 pay 60% of the price per person.

If a person cancels the venue more than a month in advance, they receive 85% of the venue hire cost back and 90% of the price paid per person.

If a person cancels the venue less than a month in advance, they receive 60% of the venue hire cost back and 78% of the price paid per person.

Use the information above to answer the questions that follow.

2.1.1 Calculate the price per person, excluding VAT, for a Saturday. (2)

2.1.2 Mr and Mrs De Klerk decided to have their wedding on a Thursday instead of on a Saturday, to save money.

(a) Determine the amount the family would have saved on the total cost of the reception, including VAT. (10)

(b) Hence, calculate the refund that Mr and Mrs De Klerk would receive if they cancelled their wedding more than a month in advance. (3)

PLEASE DETACH THIS ADDENDUM



PREPARATORY EXAMINATION

2024

10601

MATHEMATICAL LITERACY

ADDENDUM

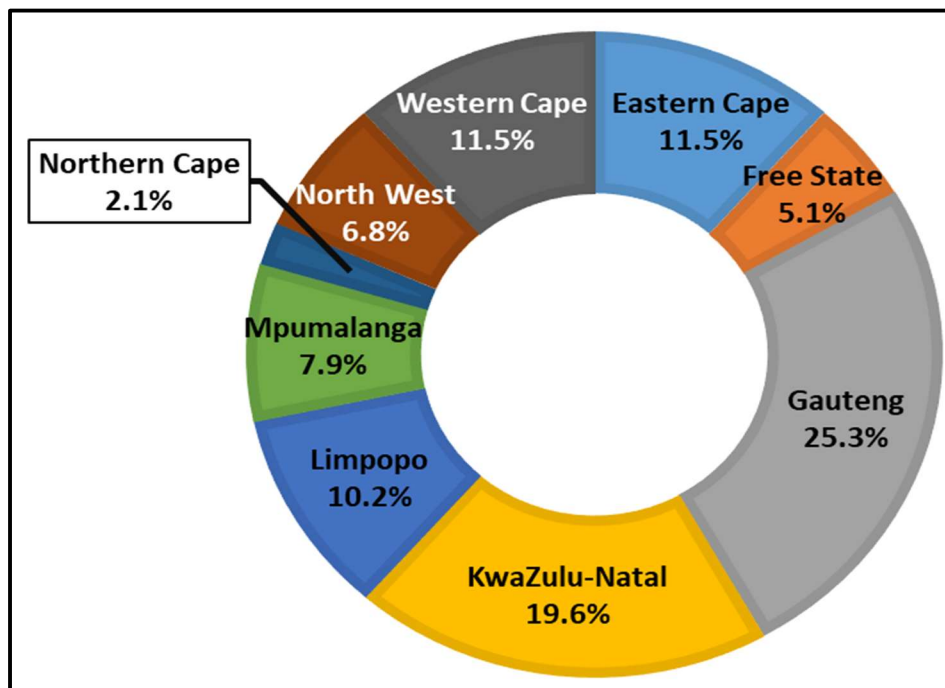
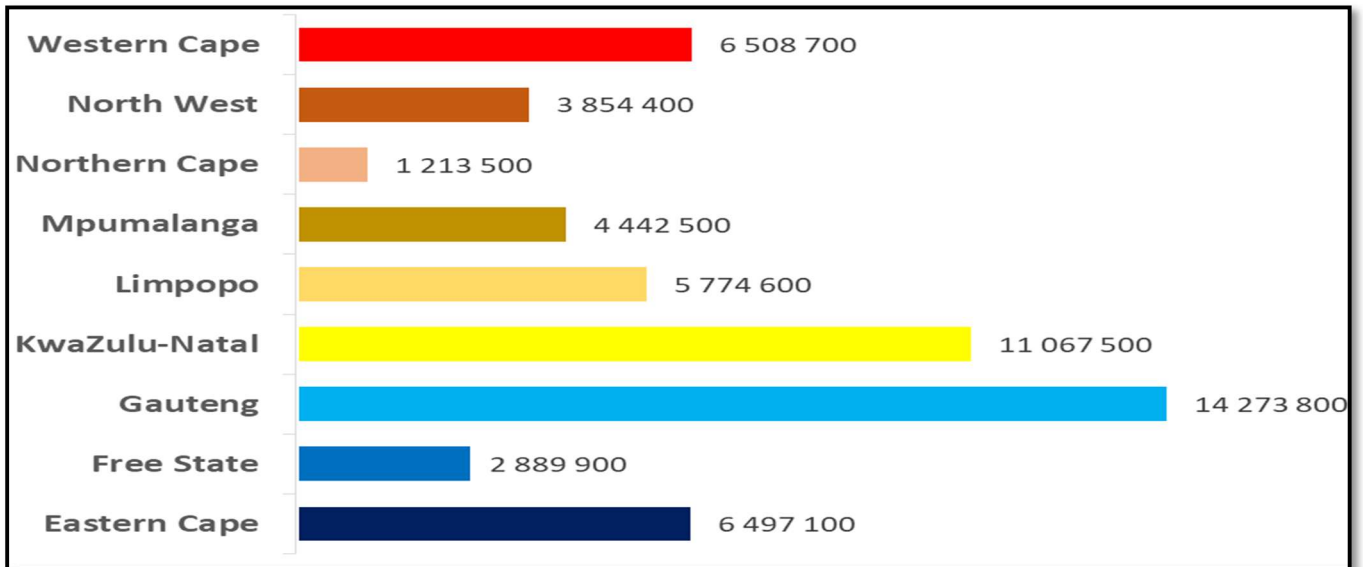
(PAPER 1)

8 pages

ANNEXURE A

QUESTION 3.1

The population of South Africa's nine provinces



[Source: <https://southafrica-info.com/infographics/infographic-population-south-africas-nine-provinces/>]

ANNEXURE B

QUESTION 4.1

2023/2024 Annual income tax deductions for individuals and special trusts

Taxable income (R)	Rates of tax (R)
1 – 237 100	18% of taxable income
237 101 – 370 500	42 678 + 26% of taxable income above 237 100
370 501 – 512 800	77 362 + 31% of taxable income above 370 500
512 801 – 673 000	121 475 + 36% of taxable income above 512 800
673 001 – 857 900	179 147 + 39% of taxable income above 673 000
857 901 – 1 817 000	251 258 + 41% of taxable income above 857 900
1 817 001 and above	644 489 + 45% of taxable income above 1 817 000

Tax Rebate	Tax year		
	2024	2023	2022
Primary	R17 235	R16 425	R15 714
Secondary (65 and older)	R9 444	R9 000	R8 613
Tertiary (75 and older)	R3 145	R2 997	R2 871

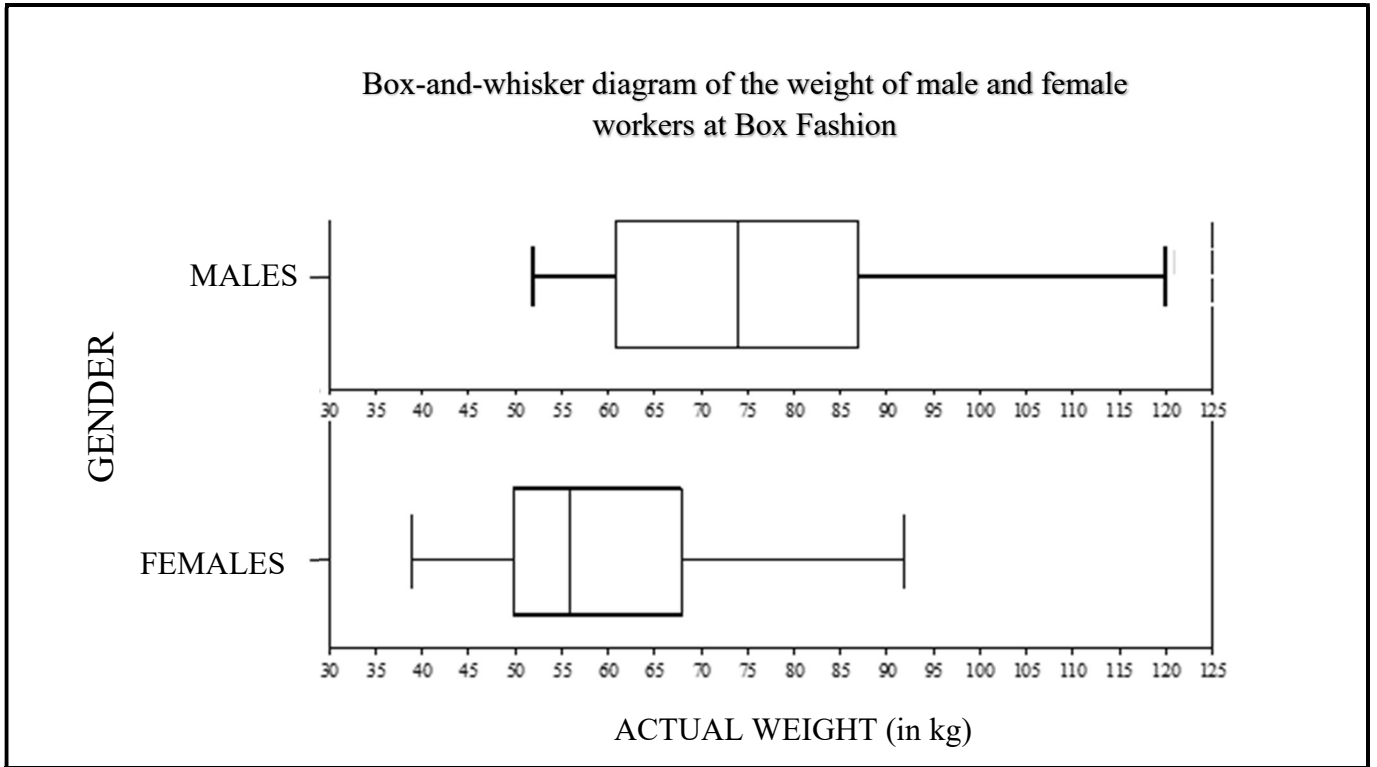
Tax Thresholds	Tax year		
	2024	2023	2022
Under 65	R95 750	R91 250	R87 300
65 and older	R148 217	R141 250	R135 150
75 and older	R165 689	R157 900	R151 100

Medical Tax Credit Per month (R)	Tax year		
	2024	2023	2022
For the taxpayer	R728	R694	R664
For the first dependant	R728	R694	R664
For each additional dependant	R246	R234	R224

[Source: Adapted from <https://www.SARS.gov.za>]

ANNEXURE C

QUESTION 4.2



ANNEXURE D

QUESTION 4.3

Statement of Account/Tax Invoice



P O BOX 8296
JOHANNESBURG 2000
0860 000 000

2ND FLOOR
33 BAKER STREET
ROSEBANK

Statement Details

MR PHILLIP TSHABALALA
66 THE HIGHWAY
FLORIDA
1712

Page	1 of 2
Date	05/01/2024
Statement Period	05/12/2023 to 04/01/2024
Agreement Number	0000795381/1
NCA Reg No.	NGRCP15
VAT Registration No.	4100095461

Payment Information

Principal Debt	R269 439,15
Instalment	A
Service Fee	*R69,00
LPI/Other Charges	R0,00
Total Arrears	0,00
Advance	0,00
Payable On	20/01/2024

Account Summary

Goods Description	RENAULT KIGER 1.0T ZEN 2021
Contract Period	60 Months
Pay Frequency	Monthly
Period to Expiry	59 Months
Interest Rate	13,45% per year
Balloon/Residual	R0
Total balance brought forward	R450 636,98
Total balance carried forward	R443 057,36
Total Paid to Date	R7 579,62

*These items are inclusive of 15% VAT

*Before 2019 VAT was 14%

Look out for some exciting developments – you'll soon be able to conveniently manage your VAF account on the Standard Bank App. In the meanwhile, you can contact 0860 000 000 or email HomeNCar@standardbank.co.za for all VAF related queries.

ANNEXURE E

QUESTION 4.3

Statement of Account/Tax Invoice



P O BOX 8296
JOHANNESBURG 2000
0860 000 000

2ND FLOOR
33 BAKER STREET
ROSEBANK

Statement Details

MR PHILLIP TSHABALALA
66 THE HIGHWAY
FLORIDA
1712

Page	2 of 2
Date	05/01/2024
Statement Period	05/12/2023 to 04/01/2024
Agreement Number	0000795381/1
NCA Reg No.	NGRCP15
VAT Registration No.	4100095461

Invoice No: 999/24/1357566

Agreement: 0000795381/1

Transaction details

Date	Reference	Amount	Outstanding Total Balance
20/12/2023	Balance brought forward		R450 636,98
20/12/2023	Receipt		R443 126,36
20/12/2023	Service Fee	*R69,00	R443 057,36
	Balance Carried Forward		R443 057,36

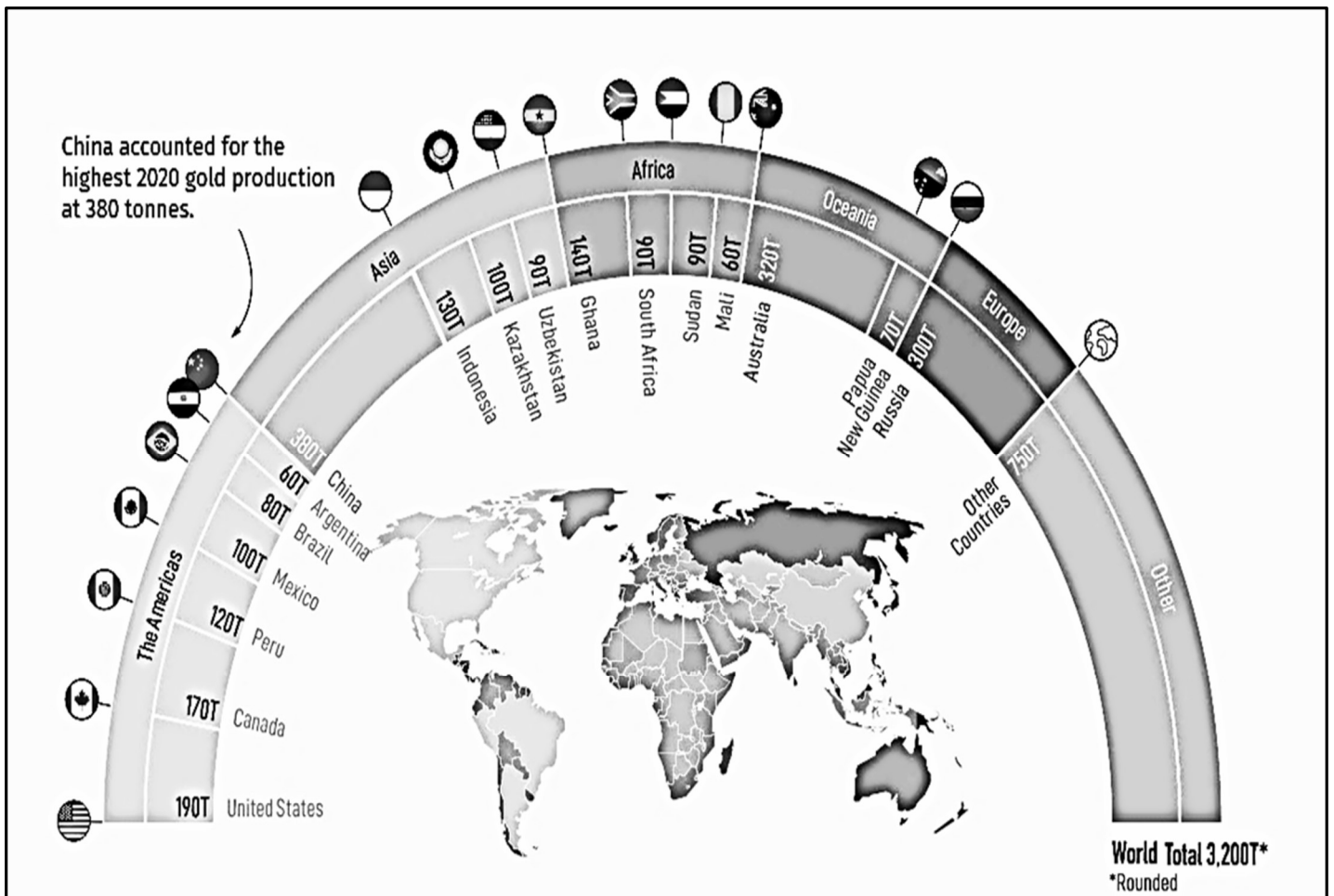
*These items are inclusive of 15% VAT

ANNEXURE F

QUESTION 5.2

GLOBAL GOLD PRODUCTION

2023 GLOBAL GOLD PRODUCTION FOR VARIOUS COUNTRIES
(GIVEN IN TONNES)

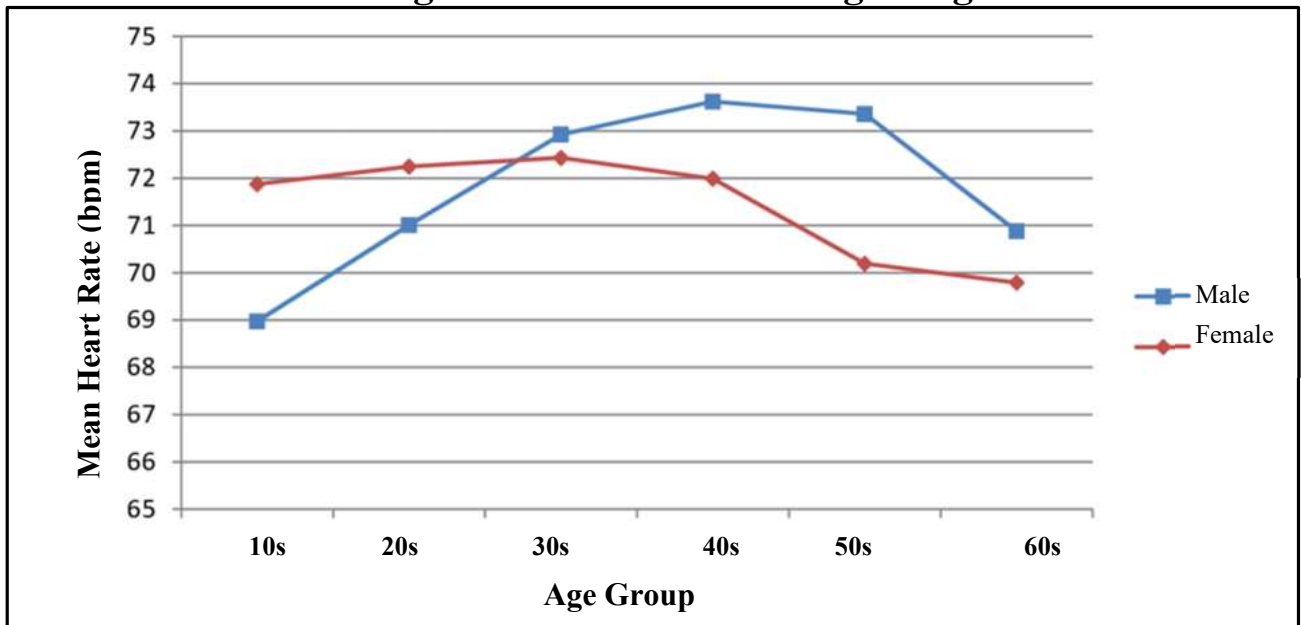


[Source: www.google.com/search?sca_esv=bc4b5e46aeab13ae&q=gold+production&tbm=isch&source=lnms&sa=X&ved=2ahUKEwi6r97_ncyEAXVYaEEAHdcYAOwQ0pQJegQIDRAB&biw=1920&bih=960#imgsrc=FQ2TVNvAI2R_M]

ANNEXURE G

QUESTION 5.3

Resting Heart Rates According to Ages



END

- (c) Determine the percentage, rounded to the nearest ten, the family would save if they were having the wedding on a Thursday.

The following formula can be used:

$$\% \text{ savings} = \frac{\text{Savings}}{\text{Saturday cost}} \times 100 \quad (3)$$

- 2.1.3 Provide a reason why the venue is more cost effective during the week than over the weekends. (2)

- 2.2 Ennyani wedding venue is situated in Krugersdorp, which falls under the Mogale City Municipality. Mogale City Municipality has two tariff structures that they use to calculate the cost of water consumption. In Table 3 below the two tariffs are given; one is a normal rate when there is a sufficient supply of water, and the other is an increased rate during times where there is a water shortage.

Table 3: Water Tariff Structure for Mogale City

Water consumption	Normal rate R/kl (Including VAT)	Water shortage rate R/kl (Including VAT)
0 – 60 kl	R18,12	R29,93
61 – 150 kl	R29,86	R52,44
151 – 300 kl	R36,58	R89,00
301 – 450 kl	R45,52	R114,44
> 451 kl	R56,12	R179,47

[Adapted from <https://www.ekurhuleni.gov.za/for-me/tariffs/>]

- 2.2.1 Ennyani wedding venue consumes an average of 971 kl of water per month. The manager at the Ennyani wedding venue states that they pay more than R150 000 when there are water shortages.

Verify, showing ALL calculations, whether his statement is correct. (6)

- 2.2.2 Why is a sliding scale used when the cost related to water usage is calculated? (2)

- 2.2.3 Determine the probability, as a decimal fraction, that there is a rate lower than R30 per kilolitre during normal water distribution. (3)

[31]

QUESTION 3

3.1 Study ANNEXURE A to answer the questions that follow.

3.1.1 Identify the province with the largest population. (2)

3.1.2 Show that the total population of South Africa is 56 522 000. (2)

3.1.3 Show how the population percentage for Mpumalanga was calculated. (3)

3.1.4 Neesah looked at the percentages and stated that there are two provinces with the same percentages, but with a different number of people for the provinces in terms of their population. Identify the TWO provinces and determine the population difference. Explain why the percentages can be the same but the population numbers are different. (4)

3.2 The following two tables show the results for Grade 12 learners for their June Examination in Mathematical Literacy (Paper 1). Study the tables and answer the questions that follow.

The results are given as a total out of 100.

Table 4: Class A

34	84	22	34	65	49	33	37	45	56
32	69	52	43	34	48	88	92	35	46
72	75	26	38	42	34	83	79	30	28

Table 5: Class B

24	46	85	32	30	67	51	89	73	44
26	21	66	49	A	54	36	92	20	48
33	39	43	31	25	69	78	81	18	60

3.2.1 Is this an example of DISCRETE or CONTINUOUS data? (2)

3.2.2 Determine the median for Class A. (3)

3.2.3 Calculate the value of A for Class B if the mean is 48,53. (4)

3.3 In a kickboxing class the learners were measured, and their heights (in metres) were recorded as follows:

Table 6: Height (in m)

1,44	1,85	1,62	1,48	1,23
0,88	1,38	1,82	2,04	0,82
1,75				

Bruce Lee stated that the range height for this set of data is more than double the height of the shortest learner. Show, by means of calculations, whether his statement is correct.

(5)
[25]

P.T.O.

QUESTION 4

- 4.1 Mr Tshabalala is a 32-year-old man that works for Box Fashion. He oversees the packaging of the boxes that must be distributed to customers. He receives a monthly gross income of R 32 542,80. He contributes 7,5% towards his pension fund. Mr Tshabalala is married and has 4 children. He contributes towards a medical aid for himself and his family.

Refer to ANNEXURE B, Annual income tax deductions for individuals and special trusts.

Use the information above and ANNEXURE B to answer the questions that follow.

- 4.1.1 Calculate Mr Tshabalala's annual taxable income. (5)
- 4.1.2 Calculate Mr Tshabalala's medical tax credit for the 2024 financial tax year. (3)
- 4.1.3 Calculate Mr Tshabalala's monthly tax contribution. (7)
- 4.1.4 Mr Tshabalala's mother is 65 years old and earns a taxable income of R10 321 per month. Mr Tshabalala claims that his mother is earning below the tax threshold for 2024, thus she is not supposed to contribute towards personal income tax.
- Verify, showing ALL calculations, whether his statement is valid. (3)
- 4.1.5 Show how the fixed amount of R179 147 in tax bracket 5 was calculated. (3)
- 4.2 Mr Tshabalala did some research on the weight of the workers at Box Fashion. His results are represented in the box-and-whisker plot in ANNEXURE C. Study the diagram in ANNEXURE C and answer the questions that follow.
- 4.2.1 Write down the median weight of the female workers. (2)
- 4.2.2 Explain the meaning of the value 50 in the box-and-whisker plot for females. (2)
- 4.2.3 Mr Tshabalala stated that the interquartile range of the male workers is double that of the female workers. Determine the difference between the interquartile range of male workers and female workers and decide whether his statement is valid. (4)

- 4.3 Mr Tshabalala bought his wife a new Renault Kiger. This car is financed by Standard Bank as he could not afford to buy the car for cash. Standard Bank allowed him to pay for the vehicle on a hire purchase agreement with a deposit of 15,8%. The cash price of the Renault Kiger is R319 999.



Use the information above and ANNEXURE D as well as ANNEXURE E to answer the questions that follow.

- 4.3.1 Calculate the deposit amount for the Renault Kiger. (2)
- 4.3.2 Calculate the instalment per month (A), for this vehicle. (5)
- 4.3.3 The service fee for Standard Bank is VAT inclusive. In 2018 the service fee was the same amount as on the statement. Calculate the VAT exclusive amount of the service fee in 2018. (2)
- 4.3.4 Verify the closing balance of R443 057,36 on 20/12/2023 in ANNEXURE E. (2)
- [40]

QUESTION 5

- 5.1 Mr Pillay's daughter plans to get married in two years, and he has decided to invest money into an Allen Gray account so that he can save towards the wedding. He decides to invest R13 000 into this account. Allen Gray offered him 17,59% p.a, compounded half yearly, for a period of two and a half years.

NOTE: *An annuity is a form of insurance or investment entitling the investor to a series of annual sums.*

- 5.1.1 Calculate the total amount that Mr Pillay will have in his account after two years. (6)
- 5.1.2 Mr Pillay's daughter asked her father to only pay for the wedding with the interest accumulated on the investment and keep the capital amount invested. Calculate the amount that Mr Pillay paid towards the wedding. (2)

5.2 Mr Pillay investigates the production of gold across the globe to determine the best options to invest his money. He found the following information given in ANNEXURE F. Study the gold production information in ANNEXURE F to answer the questions that follow.

- 5.2.1 Show how the total production, rounded-off to 3 200 tonnes, was calculated. (2)
- 5.2.2 Determine the percentage that Mexico contributed to the global gold production, rounded-off to the nearest percentage. (3)
- 5.2.3 Identify the gold production for Australia and South Africa. Why do you think the gold production in Australia is so much higher than in South Africa? (3)

5.3 Jason conducted a study on resting heart rates across age groups from 10-year olds up to 60-year-olds. He represented the data in the graph that is shown in ANNEXURE G. Study ANNEXURE G and answer the questions that follow.

- 5.3.1 Which age group has the highest mean heart rate? (2)
- 5.3.2 Determine the probability of one of the participants being 65 years old. (2)
- 5.3.3 Explain the trend of the graph that represents the resting heart rate for men in the age group 10 to 60 and give a possible reason for this trend. (4)

[24]

TOTAL: 150

END



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2024

MARKING GUIDELINES

MATHEMATICAL LITERACY (PAPER 1) (10601)

11 pages

Codes	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
D	Define
J	Justification/reason/explain
S	Simplification
RT/RD/RG	Reading from a table/graph/diagram/map/plan
F	Choosing the correct formula
SF	Substitution in a formula
O	Opinion
P	Penalty, e.g. for no units, incorrect rounding-off, etc.
R	Rounding-off
NP	No penalty for rounding-off OR omitting units

KEY TO TOPIC SYMBOLS:

F = Finance; DH = Data Handling; P = Probability

QUESTION 1 (AO – Answer only: full marks)

Q		ANSWER	EXPLANATION	MARKS	LEVEL
1.1	1.1.1	Gross income is the income Sally receives from the Johannesburg Zoo before any deductions are made. ✓✓A (Accept any sensible/logical answer)	1A income received 1A before deductions were made	(2)	F1
	1.1.2	Twenty-six thousand one hundred rand ✓✓A	2A for value in words	(2)	F1
	1.1.3	July ✓✓RT Accept: 7 th month	2 RT correct month	(2)	F1
	1.1.4	A = R1 200 + R2 186,78 + R1 390 ✓ MA = R4 776,78 ✓A B = R26 100 – R4 776,78 ✓MCA = R21 323,22 ✓CA	1MA adding all the correct values. 1A correct answer 1 MCA subtract A 1CA answer	(4)	F1
	1.1.5	✓A ✓A 32 years and 1 month	1A for 32 years 1A for 1 month	(2)	F1
	1.1.6	Pay as you earn ✓✓A	2 A correct answer	(2)	F1
1.2	1.2.1	Swedish Krona ✓✓A	2A answer	(2)	F1
	1.2.2	R1,82: 1 Krona R28 573: ? Krona = $\frac{R28\,573}{R1,82}$ ✓MA = Krona 15 699,45 ✓A	1MA division 1A correct answer	(2)	F1

Q		ANSWER	EXPLANATION	MARKS	LEVEL
1.3	1.3.1	G ✓✓A	2A correct answer	(2)	DH1
	1.3.2	B ✓✓A	2A correct answer	(2)	DH1
	1.3.3	D ✓✓A	2A correct answer	(2)	DH1
	1.3.4	F ✓✓A	2A correct answer	(2)	DH1
1.4	1.4.1	Bar graph ✓✓A	2A correct answer	(2)	DH1
	1.4.2	Level 7 ✓✓A	2A correct answer	(2)	DH1
				[30]	

QUESTION 2

Q		ANSWER	EXPLANATION	MARKS	LEVEL
2.1	2.1.1	Cost excluding VAT = $\frac{R432}{1,15}$ ✓MA $= R375,65$ ✓A OR Cost excluding VAT = $R432 \times \frac{100}{115}$ ✓MA $= R375,65$ ✓A	1MA dividing 1A answer 1MA multiply and divide 1A answer	(2)	F2
	2.1.2 (a)	Total cost = Venue hire + (Number of Adults × R432) + (Number of Pensioners × 60% × R432) + (Number of children × 25% × R432) + (Number of children above 5 × R432) OR Total cost = Venue hire + (Number of Adults × R432) + (Number of pensioners × R259,20) + (Number of children × R108) <u>Cost on a Thursday:</u> Venue hire = R0 Pensioners = $R515 \times 2 \times 60\%$ ✓MA $= R618$ ✓A Children under 5 years (adults) $= 4 \times R515 \times 25\%$ $= R515$ ✓A Guests above 5 years = $[(42 \times 2) + 6] \times R515$ $= R46\,350$ ✓CA Total cost = $R618 + R515 + R46\,350$ $= R47\,483$ ✓CA	1MA correct multiplication by 2 and 60% 1A answer pensioners 1A answer 1CA cost for guests above 5 years 1CA total cost Thursday		F3

		<u>Cost on a Saturday:</u> Venue Hire = R15 650 Pensioners = $R432 \times 2 \times 60\%$ = R518,40 ✓CA Children under 5 years = $4 \times R432 \times 25\%$ = R432 Guests above 5 years (adults) = $[(42 \times 2) + 6] \times R432$ = R38 880 ✓CA Total cost = R15 650 + R518,40 + R432 + R38 880 ✓MCA = R55 480,40 ✓CA <u>Total savings:</u> Savings = R55 480,40 – R47 483 = R7 997,40 ✓CA	1CA cost pensioners 1 CA guests above 5 years 1 MCA adding all values. 1CA total cost 1CA answer	(10)	
	2.1.2 (b)	✓MCA ✓RT Total refund = $R47\,483 \times 90\%$ = R42 734,70 ✓CA	CA 2.1.2(a) 1MCA total cost 1RT multiplying with 90% 1CA answer	(3)	F2
	2.1.2 (c)	% savings = $\frac{R7\,997,40}{R55\,480,40} \times 100$ ✓SF = 14,41% ✓CA = 10% ✓R	CA 2.1.2(a) 1SF substitution in formula 1CA answer 1R rounding down	(3)	F2
	2.1.3	The venues are not as busy during the week because to people are working. The demand is low thus the venue tries to get more people to book by decreasing the cost of renting the venue ✓✓O <i>(Accept any logical/sensible explanation)</i>	2O correct explanation	(2)	F4
2.2	2.2.1	✓MA $60 \times R29,93 = R1\,795,80$ ✓A $90 \times R52,44 = R4\,719,60$ $150 \times R89 = R13\,350$ ✓CA $150 \times R114,44 = R17\,166$ $521 \times R179,47 = R93\,503,87$ ✓CA Total cost = R130 535,27 ✓CA His statement is INVALID ✓O	1MA correct kilolitres and correct rate 1A answer 1 st category 1CA 3 rd category answer 1CA last category answer 1CA total cost 1O conclusion	(6)	F2

Q	ANSWER	EXPLANATION	MARKS	LEVEL
2.2.2	To reduce water consumption, the more water you use, the more you will pay. ✓✓O (Accept any logical/sensible answer)	2O opinion	(2)	F4
2.2.3	$P(\text{Rate less than R30}) = \frac{2}{5} \checkmark A \checkmark A$ $= 0,4 \checkmark CA$	1A numerator 1A denominator 1CA probability as a decimal AO	(3)	P1
			[31]	

QUESTION 3																																							
Q		ANSWER								EXPLANATION	MARKS	LEVEL																											
3.1	3.1.1	Gauteng ✓✓RT								2RT correct answer	(2)	DH1																											
	3.1.2	6 497 100 + 2 899 900 + 14 273 800 + 11 067 500 + 5 774 600 + 4 442 500 + 1 213 500 + 3 854 400 + 6 508 700 ✓RT✓MA = 56 522 000								1RT all values correct 1MA adding values Note: NO mark for answer	(2)	DH2																											
	3.1.3	$\frac{4\,442\,500 \checkmark RT}{56\,522\,000} \times 100 \checkmark M$ = 7,9% ✓CA								1RT correct value 1M concept of percentages 1CA final answer	(3)	DH2																											
	3.1.4	Western and Eastern Cape ✓RT The difference is: 6 508 700 – 6 497 100 ✓M = 11 600 ✓CA Because the numbers are so large, it will be possible to have the same percentage. ✓J								1RT for both provinces 1M subtracting 1CA difference 1J explanation	(4)	DH4																											
3.2	3.2.1	Discrete data ✓✓A								2A correct answer	(2)	DH1																											
	3.2.2	<table border="1"><tr><td>22</td><td>26</td><td>28</td><td>30</td><td>32</td><td>33</td><td>34</td><td>34</td><td>34</td><td>34</td></tr><tr><td>35</td><td>37</td><td>38</td><td>42</td><td>43</td><td>45</td><td>46</td><td>48</td><td>49</td><td>52</td></tr><tr><td>56</td><td>65</td><td>69</td><td>73</td><td>75</td><td>79</td><td>83</td><td>84</td><td>88</td><td>92</td></tr></table> 								22	26	28	30	32	33	34	34	34	34	35	37	38	42	43	45	46	48	49	52	56	65	69	73	75	79	83	84	88	92
22	26	28	30	32	33	34	34	34	34																														
35	37	38	42	43	45	46	48	49	52																														
56	65	69	73	75	79	83	84	88	92																														

Q	ANSWER	EXPLANATION	MARKS	LEVEL
3.2.3	$48,53 = \frac{24+46+\dots+A}{30} \checkmark M$ $48,53 \times 30 = A + 1\,430 \checkmark M$ $1\,455,9 - 1\,430 = A \checkmark M$ $A = 26 \checkmark CA$	M concept of mean M multiply by 30 M subtract 1 430 CA final answer NPR	(4)	DH 3
3.3	Range = $2,04 - 0,82 \checkmark M$ Range = $1,22 \text{ m} \checkmark CA$ $\checkmark M$ $0,82 \times 2 = 1,64 \text{ m} \checkmark CA$ His statement is INCORRECT. $\checkmark J$ OR Range = $2,04 - 0,82 \checkmark M$ Range = $1,22 \text{ m} \checkmark CA$ $= \frac{1,22 \text{ m}}{2} \checkmark M$ $= 0,61 \text{ m} \checkmark CA$ His statement is INCORRECT. $\checkmark J$	M concept of range CA range value 1M multiply/divide by 2 CA final answer J justification	(5)	DH3
			[25]	

QUESTION 4					
Q		ANSWER	EXPLANATION	MARKS	LEVEL
4.1	4.1.1	$\text{Income} = \text{R}32\,542,80 \times 12$ $= \text{R}390\,513,60 \checkmark \text{A}$ $\checkmark \text{MA}$ $\text{Pension} = 7,5\% \times \text{R}32\,542,80 \times 12$ $= \text{R}29\,288,52 \checkmark \text{CA}$ OR $\text{Pension} = \text{R}390\,513,60 \times 7,5\%$ $= \text{R}29\,288,52$ $\checkmark \text{MCA}$ $\text{Total} = \text{R}390\,513,60 - \text{R}29\,288,52$ $= \text{R}361\,225,08 \checkmark \text{CA}$	1A for annual gross income 1MA multiplication of both percentages 1CA pension fund contribution 1MCA subtraction 1CA final answer	(5)	F2
	4.1.2	$\text{Medical Tax Credit}$ $= \text{R}728 + \text{R}728 + (\text{R}246 \times 4) \checkmark \text{RT}$ $\checkmark \text{CA}$ $= \text{R}2\,440 \times 12$ $= \text{R}29\,280 \checkmark \text{CA}$	1RT for both values 1CA monthly value 1CA annual value	(3)	F2
	4.1.3	$\checkmark \text{RT} \quad \checkmark \text{SF}$ $\text{Tax} = \text{R}42\,678 + 26\%(\text{R}361\,225,08 - \text{R}237\,100)$ $= \text{R}42\,678 + \text{R}32\,272,52 \checkmark \text{S}$ $= \text{R}74\,950,52 \checkmark \text{CA}$ $\checkmark \text{MA}$ $= \text{R}74\,950 - \text{R}17\,235 - \text{R}29\,280$ $= \text{R}28\,435,52$ $= \text{R}28\,435,52 \div 12 \checkmark \text{M}$ $= \text{R}2\,369,63 \checkmark \text{CA}$	CA from Q 4.1.1 and Q 4.1.2 1RT correct tax bracket 1SF substitution into formula 1S simplification 1CA tax before rebates 1MA subtracting both rebate and medical credit 1M dividing by 12 1CA final answer	(7)	F4

Q	ANSWER	EXPLANATION	MARKS	LEVEL	
4.1.4	Annual income = $R10\,321 \times 12$ ✓MA = R123 852 ✓A Her income is below the tax threshold of R148 217, thus his statement is valid. ✓J OR $= \frac{R148\,217}{12}$ ✓MA = R12 351,42 ✓A Her income is below the tax threshold of R148 217, thus his statement is valid. ✓J	1MA multiply/divide by 12 1A correct answer 1J conclusion	(3)	F2	
4.1.5	✓RT ✓SF Fixed = $R121\,475 + 36\%(673\,000 - 512\,800)$ = $R121\,475 + R57\,672$ ✓S = R179 147	1RT correct tax bracket 1SF substitution max value. 1S simplification	(3)	F2	
4.2	4.2.1	56 kg ✓✓A	2A correct answer (Accept 57 kg)	(2)	DH1
4.2.2	50 represents the lower 25% of the data ✓✓J OR It is 25% of the data represented. OR It represents 25% of the data. OR 50 represents the lower quartile/first quartile	2J justification/ explanation	(2)	DH4	
4.2.3	Male = $87 - 61$ Male = 26 kg ✓A Female = $68 - 50$ Female = 18 kg ✓A Difference $26\text{ kg} - 18\text{ kg} = 8\text{ kg}$ ✓CA His statement is incorrect. ✓J	1A IQR of males Accept calculations with 88 and 62 1A IQR of females Accept calculations with 67 and 50 1CA difference 1J justification/ conclusion	(4)	DH4	
4.3	4.3.1	Deposit = $15,8\% \times R319\,999$ ✓MA = R50 559,84 ✓A	1MA multiplying % 1A Answer	(2)	F2

		ANSWER	EXPLANATION	MARKS	LEVEL
	4.3.2	Time of loan = 60 months $\div$ 12 = 5 years ✓A Interest = R269 439,15 $\times$ 13,45% $\times$ 5 ✓MA = R181 197,83 = R181 197,83 + R269 439,15 = R450 636,98 ✓CA Instalment = R450 636,98 $\div$ 60 ✓MCA = R7 510,62 ✓CA OR ✓RT ✓RT R7 579,62 – R69,00 ✓M = R7 510,62 ✓✓CA OR ✓RT ✓RT Instalment = R450 636,98 $\div$ 60 ✓M = R7 510,62 ✓✓CA	1A answer number of years. 1MA simple interest formula 1CA for addition to principal loan amount 1MCA dividing by 60 1CA answer	(5)	F3
	4.3.3	VAT exclusive = R69 $\div$ 1,14 ✓MA = R60,53 ✓A OR VAT exclusive = R69 $\times$ $\frac{100}{114}$ ✓MA = R60,53 ✓A OR = R69 $\times$ $\frac{14}{114}$ ✓MA = R8,47 $\therefore$ R60,53 – R8,47 = R60,53 ✓A	1MA dividing by 1,14 1A answer	(2)	F2
	4.3.4	Closing balance = R443 126,36 – R69 ✓MA ✓RT = R443 057,36 OR ✓RT = R443 057,36 + R7 579,62 ✓MA = R450 636,98	1MA subtracting service fee. 1RT both values 1MA adding total amount due to total balance carried forward 1RT both values	(2)	F1
				[40]	

QUESTION 5					
		ANSWER	EXPLANATION	MARKS	LEVEL
5.1	5.1.1	Timeframe = 2 years $\times$ 2 half = 4 halves ✓A 1st half = $R13\,000 \times \frac{17,59\%}{2}$ ✓MA $= R1\,143,35 + R13\,000$ $= \mathbf{R14\,143,35}$ ✓A 2nd half = $R14\,143,35 \times \frac{17,59\%}{2}$ $= R1\,243,91 + R14\,143,35$ $= \mathbf{R15\,387,26}$ ✓CA 3rd half = $R15\,387,26 \times \frac{17,59\%}{2}$ $= R1\,353,31 + R15\,387,26$ $= \mathbf{R16\,740,57}$ ✓CA 4th half = $R16\,740,57 \times \frac{17,59\%}{2}$ $= R1\,472,33 + R16\,740,57$ $= \mathbf{R18\,212,90}$ ✓CA	1A number of calculations. 1MA concept of compound interest 1A answer first half. 1CA answer 2nd half. 1CA answer 3rd half. 1CA answer 4th half. Accept answers with 8,795% calculations	(6)	F3
	5.1.2	Interest = $R18\,212,90 - R13\,000$ ✓MCA $= R5\,212,90$ ✓CA	CA 5.1.1 1MCA subtracting principal value 1CA answer	(2)	F1
5.2	5.2.1	Total = 190 ton + 170 ton + 120 ton + 100 ton + 80 ton + 60 ton + 380 ton + 130 ton + 100 ton + 90 ton + 140 ton + 90 ton + 90 ton + 60 ton + 320 ton + 70 ton + 300 ton + 750 ton ✓MA Total = 3 240 tonnes ✓A = 3 200 ton	1MA adding all correct values 1A answer	(2)	DH1
	5.2.2	$\% = \frac{100T \times RT}{3\,200T} \times 100$ ✓M $= 3,125\%$ $= 3$ ✓CA OR $\% = \frac{100T \times RT}{3\,240T} \times 100$ ✓M $= 3,086\%$ $= 3$ ✓CA	RT both correct values M concept of percentage CA rounded answer	(3)	DH2
	5.2.3	South Africa 90 tonnes ✓RT Australia 320 tonnes ✓RT If you look at the information on the annexure, South Africa's production is much smaller than Australia. If you compare the production of the countries, South Africa's production will be able to fit almost 5 times into Australia. Australia has more resources available than South Africa. ✓J	1RT South Africa 1RT Australia 1J justification	(3)	DH4

		ANSWER	EXPLANATION	MARKS	LEVEL
5.3	5.3.1	40 years ✓✓A	2A correct answer	(2)	DH1
	5.3.2	Impossible OR 0 ✓✓A	2A correct answer	(2)	P1
	5.3.3	The graph increases until 40 ✓A and then decreases from 40 to 60. ✓A From 10 to 20, most boys are active, and they exercise often. From 20 to 40, men are active, but not as fit as they were between 10 and 20. From 40 to 60, men are not as active as they should be, thus they do not work as hard as they did from 20 to 40. ✓✓J	1A increase 1A decrease 2J justification	(4)	DH4
				[24]	
				[150]	



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DEPARTMENT OF
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

**MATHEMATICAL LITERACY P1
PREPARATORY EXAMINATION
SEPTEMBER 2024
MARKING GUIDELINES**

MARKS/PUNTE: 150

Symbol/Kode	Explanation/Verduideliking
M	Method/Metode
MA	Method with accuracy/Metode met akkuraatheid
MCA	Method with consistent accuracy/Metode met volgehoue akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/graph/document/diagram/Lees vanaf tabel/grafiek/dokument/diagram
SF	Correct substitution in a formula/Korrekte vervanging in 'n formule
O	Opinion/Explanation/Opinie/Verduideliking
P	Penalty, e.g. for no units, incorrect rounding off, etc./Penalisasie, bv. vir geen eenhede, verkeerde afronding, ens.
NPR	No penalty for correct rounding/Geen penalisasie vir korrekte afronding nie
NPU	No penalty for omitting unit, but wrong unit is penalised/Geen penalisasie indien die eenheid uitgelos is, maar wel indien 'n verkeerde eenheid gebruik word.
AO	Answer only/Slegs antwoord

**These marking guidelines consist of 12 pages.
Hierdie nasienriglyne bestaan uit 12 bladsye.**

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake he loses one mark.
- A conclusion mark can only be given if relevant calculations precedes it.

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas; dit hou egter op by die tweede berekeningsfout.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *Afronding tel as 'n afsonderlike punt.*
- *Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.*

QUESTION/VRAAG 1 [31 MARKS/PUNTE] ANSWER ONLY FULL MARKS			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	-8,8°C; -8,6°C; -7,4°C; -5,7°C; -5,7°C; -4,7°C. -0,8°C; -0,6°C; 6,1°C; 7,0°C ✓RT ✓A	1RT all correct values 1A correct order (2)	D L1 E
1.1.2	22 December 2023 ✓✓RT	2RT correct date (2)	D L1 E
1.1.3	Continuous ✓✓A	2A correct answer. (2)	D L1 M
1.1.4	✓RT Difference = - 0,9°C – (-8,8°C) ✓MA = 7,9°C ✓A	1RT correct values 1MA subtracting correct values 1A simplification (3)	D L1 E
1.1.5	5 OR Five ✓✓A	2A correct number of days. (2)	D L1 E

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.2.1	1 218 000 000 ✓✓ A	2A correct answer (2)	D L1 E
1.2.2	55 – 64 ✓✓ A	2A correct answer. (2)	D L1 E
1.2.3	Total % of Facebook male users. = 2,7% + 12,6% + 17,6% + 10,9% + 6,1% + 3,5% + 2,6% ✓MA = 56% ✓A	1MA adding all correct values. 1A simplification. (2)	D L1 E
1.2.4	Douyin ✓✓ RT	2RT correct answer (2)	D L1 E
1.3			
1.3.1	The amount of money it costs Tumelo to make the jam tarts. ✓✓ A OR The price at which Tumelo spent to buy the ingredients. ✓✓ A OR The amount of money Tumelo use/spent to make the jam tarts. ✓✓ A	2A correct definition. (2)	F L1 E
1.3.2 (i)	$A = R\ 30,00 \times \frac{5\ ml}{100\ ml}$ ✓MA = R1,50 ✓CA OR 100 ml ÷ 5ml = 20 ✓MA $A = \frac{R30,00}{20}$ = R1,50 ✓CA OR $A = R54,00 - (R6,00 + R3,66 + R3,30 + R17,99 + R1,75 + R19,80)$ ✓MA = R54,00 – R52,50 = R1,50 ✓CA	1MA multiplying correct values. 1CA simplification OR 1MA dividing correct values. 1CA simplification OR 1MA adding and subtracting correct values. 1CA simplification. (2)	F L1 M

1.3.2 (ii)	$B = \frac{\check{A}}{2} \times R3,66 \check{MA}$ $= R10,98 \check{A}$ OR $B = 3 \times R3,66 \check{MA}$ $= R10,98 \check{A}$	1A correct fraction 1MA multiplying by R3,66. 1CA simplification. OR 1A correct value 3 1MA multiplying by R3,66. 1CA simplification. (3)	
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1.3.3	$24 \div 6 = 4 \checkmark M$ Actual Cost $= \frac{R54,00}{4} \checkmark MA$ $= R13,50 \checkmark A$ OR Actual Cost $\checkmark M$ $= \frac{R54,00}{24} \times 6 \checkmark MA$ $= R13,50 \checkmark A$	1M dividing values. 1MA multiplying or dividing correct values. 1CA simplification. OR 1M dividing values. 1MA multiplying or dividing correct values. 1CA simplification (3)	F L2 M
1.3.4	Number of batches $= \frac{200 g}{10 g} \checkmark MA$ $= 20 \checkmark A$	1MA dividing correct values. 1A simplification. (2)	F L1 E
		[31]	

QUESTION 2 [33 MARKS]			
Ques	Solution	Explanation	Level
2.1.1	2237654213✓✓RT	2A correct tax number (2)	F L1 E
2.1.2	12 months✓✓ A	2A correct answer (2)	F L 1 E
2.1.3	Monthly tax credits ✓MA $= (R347 \times 2) + (R234 \times 2)$✓MA $= R694 + R468$ $= R1\ 162$ Annual tax credits $= R1\ 162 \times 12$✓MCA $= R13\ 944$✓CA	1MA multiplying correct values 1MA multiplying correct values. 1MCA multiplying by 12. 1CA simplification. (4)	F L3 M
2.1.4	Tax before rebates. ✓RT $= R73\ 726 + 31\% \times (R474\ 441 - R353\ 100)$✓SF $= R73\ 726 + 31\% \times R121\ 341$ $= R73\ 726 + R37\ 615,71$✓S $= R111\ 341,71$✓CA Tax after rebates $= R111\ 341 - R16\ 425 - R13\ 944$✓MA ✓MCA $= R80\ 972,71$✓CA His statement is not valid.✓O	CA from 2.1.3 1RT correct bracket. 1SF substitute R474 441. 1S simplification 1CA amount before rebates. 1MA subtracting rebate. 1MCA subtracting medical tax credits. 1CA simplification. 1O conclusion. (8)	F L4 M
2.2			
2.2.1	Buying goods on credit.✓✓A OR Buying goods on small regular payments until debt is completely paid.✓✓A	2A correct definition. (2)	F L1 E

2.2.2	Original Selling Price $= R10\,999,00 + R2\,000,00 \checkmark \text{MA}$ $= R12\,999,00 \checkmark \text{A}$	1MA adding correct amounts. 1A simplification. AO (2)	F L1 E
2.2.3	$\text{VAT amount} = \frac{\checkmark \text{A}}{115} \times R10\,999,00 \checkmark \text{MA}$ $= R1\,434,65 \checkmark \text{CA}$ OR Price excluding VAT $= \frac{R10\,999,00}{1,15} \checkmark \text{MA}$ OR $= \frac{100}{115} \times R10\,999,00 \checkmark \text{MA}$ $= R9\,564,35 \checkmark \text{A}$ $\text{VAT amount} = R10\,999,00 - R9\,564,35$ $= R1\,434,65 \checkmark \text{CA}$	1A correct VAT calculation. 1MA multiplying by R10 999. 1CA simplification. OR 1MA dividing by 1,15 OR 1MA multiplying by $\frac{100}{115}$ 1A VAT excluded amount. 1CA simplification. (3)	F L2 M
2.2.4	The stove function on dual purpose of gas and electricity. $\checkmark \checkmark \text{O}$	1O correct explanation. (2)	F L4 E

2.2.5	Deposit $= 20\% \times R10\,999,00$ $= R2\,199,80 \checkmark A$ Total cost including deposit. $\checkmark MA$ $= R609,00 \times 30 \text{ months} + R2\,199,80 \checkmark MCA$ $= R20\,469,80 \checkmark CA$ One third of the amount $= R20\,469,80 \times \frac{1}{3} / \div 3 \checkmark MCA$ $= R6\,823,27 \checkmark CA$ Amount saved = $R20\,469,80 - R10\,999,00$ $= R9\,470,80 \checkmark CA$ Her statement is valid. $\checkmark O$	1A deposit amount. 1MA correct value $\times 30$ 1MCA adding deposit. 1CA simplification. 1MCA dividing by 3 or $\times$ by $\frac{1}{3}$. 1CA simplification. 1CA amount saved. 1O conclusion. (8)	F L4 D
		[33]	

QUESTION 3 [28 MARKS]			
Ques	Solution	Explanation	Level
3.1.1	Questionnaire/ Survey/ Google form/interview ✓✓ A	2 RT correct instrument (2)	D L1 E
3.1.2.	Total number ✓RT = 4 567 497 + 4 083 742 + 1 623 467 + 7 846 125 + 5 200 602 + 2 151 336 ✓MA = 25 472 769 ✓CA	1RT all correct values. 1MA adding all correct values. 1CA simplification, (3)	D L2 E
3.1.3.	Total population = $\frac{31\,029\,291}{59,93617\%}$ ✓RT ✓MA = 51 770 560 ✓A Total number of persons younger than 25 years. = 51 770 560 – 31 029 291 ✓MCA = 20 741 269 ✓CA	1RT correct value. 1MA dividing by correct %. 1A total population, accept 51 770 561. 1MCA subtracting correct values. 1CA simplification, accept 20 741 270. (5)	D L3 D
3.1.4.	Probability = $\frac{14\,122\,681}{62\,027\,503}$ ✓A = 0,23 / 0,228 / 0,2 ✓CA	1A numerator. 1A denominator. 1CA simplification. (3)	P L2 E
3.2			
3.2.1	25,2; 28,6; 29,0; 32,8; 33,3; 34,3; 37,7; 39,0; 40,9 ✓A Median = 33,3 ✓A Western Cape ✓CA	1A arranging values. 1A correct median. 1CA correct province. (3)	D L2 M
3.2.2	Probability = $\frac{3}{9}$ ✓A × 100% = 33% / 33,3% / 33,33% ✓CA	1A numerator. 1A denominator. 1CA simplification. (3)	P L2 M

3.2.3	Data is per province. ✓✓A OR The percentages given represent the number of people with grade 12 as a percentage of the number of people 25 years and older in each province and not nationally. ✓✓O OR Rounding.	2O correct explanation. (2)	D L4 D
3.2.4	$Q1 = \frac{28,6 + 29,0}{2}$ ✓MA = 28,8% ✓A $IQR = Q3 - Q1$ ✓MA = 38,35% - 28,8% ✓MCA = 9,55% ✓CA	1MA correct values ÷ by 2. 1A correct Q1. 1MA correct formula. 1MCA subtracting correct values. 1CA simplification. (5)	D L3 M
3.2.5	The percentages do not add up to 100%. ✓✓O OR The degrees do not add up 360°. ✓✓O OR There are too many sectors. ✓✓O	2O reason. (2)	D L4 M
		[28]	

	QUESTION 4 [30 MARKS]		
4.1.1	ZAR✓✓A	2A correct abbreviation. (2)	F L1 E
4.1.2	$1 \text{ ZAR} = \text{US } \$0,05288 \checkmark \text{RT}$ $\text{US } \$1 = \frac{1}{0,05288} \checkmark \text{MA}$ $= \text{R}18,91074 \checkmark \text{A}$	1RT correct exchange rate. 1MA dividing correct values. 1A simplification. NPR (3)	F L2 M
4.1.3	US dollar / US \$✓✓RT	2A correct currency (2)	F L1 E
4.1.4	USA offer in rands. $\checkmark \text{A}$ $= \frac{3\,998}{0,05288} \checkmark \text{MA}$ $= \text{R}75\,605,14 \checkmark \text{A}$ OR $\checkmark \text{A}$ $= 3\,998 \times \text{R}18,91074 \checkmark \text{MA}$ $= \text{R}75\,605,14 \checkmark \text{A}$ Canadian offer in rands. $= 5\,384 \times \text{R}14,01 \checkmark \text{MA}$ $= \text{R}75\,429,84 \checkmark \text{A}$ Difference in rand = $\text{R}75\,605,14 - \text{R}75\,429,84 \checkmark \text{MCA}$ $= \text{R}175,30 \checkmark \text{CA}$ His statement is invalid / not valid.✓O	1A correct exchange rate. 1MA dividing/multiplying with correct exchange rate. 1A simplification. OR 1A correct exchange rate. 1MA dividing/multiplying with correct exchange rate. 1A simplification. 1MA multiplying with correct exchange rate. 1A simplification. 1MCA subtracting values. 1CA simplification. 1O conclusion. (8)	F L4 M
4.2			
4.2.1	Value of D in thousands of rand. $\checkmark \text{MA}$ $= 601\,228 - (141\,319 + 130\,692 + 97\,390) \checkmark \text{RT}$ $= 601\,228 - 371\,835$ $= 229\,393 \checkmark \text{CA}$	1MA subtracting from 601 228. 1RT 3 correct values.; 1CA simplification. (3)	F L2 M

[illegible]

	QUESTION 5 [26 MARKS]		
5.1.1	2021 Range (in millions) = $175,61 - 168,49$ ✓MA $= 7,12$ ✓A 2022 Range (in millions) = $178,53 - 171,27$ $= 7,26$ ✓CA The year with the largest range = 2022 ✓CA	1MA subtracting correct values. 1A simplification. 1CA simplification. 1CA correct year. (4)	D L2 E
5.1.2	Average coffee consumption. $= \frac{165,64 + 170,88 + 167,59 + 168,57 + 175,61 + 178,53}{6}$ $= \frac{1026,82}{6}$ ✓MA $= 171,14$ ✓CA	1MA mean concept. 1MA adding all correct values. 1CA simplification. NPR (3)	D L2 M
5.2			
5.2.1	Tariff increase = $R2,3846 - R1,7322$ ✓MA $= R0,6524$ $= R0,65$ ✓R	1MA subtracting correct values. 1R correct rounding. (2)	F L2 E
5.2.2 (a)	P = $R332,74 - R173,22$ ✓MA $= R159,52$ ✓A	1MA subtracting correct amounts. 1A simplification. (2)	F L2 M
(b)	✓MA $Q = \frac{R2\ 666,23 - R2\ 242,48}{R2\ 242,48} \times 100\%$ ✓MA $= 18,8964896$ ✓CA	1MA subtracting and dividing correct amounts. 1MA calculating %. 1CA simplification. NPR (3)	
(c)	✓RT $S = R3\ 643,28 \times 138,5693\%$ ✓MA $= R5\ 048,47$ ✓A OR ✓MA $S = R3\ 643,28 \times 38,5693\% + R3\ 643,28$ ✓RT $= R1\ 405,19 + R3\ 643,28$ $= R5\ 048,47$ ✓A	1RT correct amount. 1MA calculating % increase. 1A simplification. 1MA calculating % increase. 1RT correct amount. 1A simplification. (3)	

5.2.3	Amount payable. ✓ RT ✓ RT ✓ MA $= (50 \text{ kwh} \times R0) + (100 \text{ kwh} \times R1,7322)$ $= R173,22$	1RT 50 kwh. 1RT 100 kwh. 1MA multiplying with the correct tariff. (3)	F L2 E
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5.2.4	Monthly amount billed in 2022. $\begin{aligned} &= (50 \text{ kwh} \times R0) + (300 \text{ kwh} \times R1,7322) + (250 \text{ kwh} \times R2,4087) + (750 \text{ kwh} \times R2,8016) \\ &= R519,66 + R602,18 + R2\ 101,20 \\ &= R3\ 223,04 \end{aligned}$ OR Monthly amount billed in 2022. $\begin{aligned} &= R2\ 242,48 + (350 \text{ kwh} \times R2,8016) \\ &= R2\ 242,48 + R980,56 \\ &= R3\ 223,04 \end{aligned}$ Monthly amount billed in 2023. $\begin{aligned} &= (50 \text{ kwh} \times R1,8856) + (300 \text{ kwh} \times R2,3846) + (250 \text{ kwh} \times R3,2367) + (750 \text{ kwh} \times R3,8107) \\ &= R94,28 + R715,38 + R809,18 + R2\ 858,03 \\ &= R4\ 476,87 \end{aligned}$ OR $\begin{aligned} &= R2\ 666,23 + (350 \text{ kwh} \times R3,8107) \\ &= R2\ 666,23 + R1\ 333,75 \\ &= R3\ 999,98 \end{aligned}$ Monthly increase = $R3\ 999,98 - R3\ 223,04$ $= R776,94$ Annual increase = $R776,94 \times 12$ $= R9\ 323,28$	1RT all correct kwh. 1MA multiplying with the correct tariffs. 1CA simplification. OR 1RT correct amount. 1MA 350 kwh multiply by correct tariff. 1CA simplification. 1MA multiplying all kwh with the correct tariffs. 1CA simplification. OR 1MA multiplying and adding correct values. 1CA simplification. 1MCA subtracting correct amounts. 1CA simplification. 1CA annual increase. (8)	F L3 D
		[28]	
		TOTAL: 150	



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MATHEMATICAL LITERACY GRADE

12

PREPARATORY EXAMINATION PAPER 1

MEMORANDUM(ERRATA)

SYMBOL/SIMBOOL	EXPLANATION/VERDUIDELIKING
M	Method/METODE
MA	Method with Accuracy/metode met akkuraatheid
CA	Consistent accuracy/konstante akkuraatheid
RCA	Rounding consistent Accuracy/af rond konstante akkuraatheid
A	Accuracy/akkuraatheid
O	Opinion/Explanation/ verduideliking
C	Conversion/omskakeling
S	Simplification/vereenvoudiging
RT/RG/RD/RM	Reading from table/Reading from graph/Reading from diagram/Reading from map/lees van grafiek ,diagram,kaart
F	Choosing the correct formula/korrekte formule
SF	Correct substitution in a formula/korrekte substitusie in formule
J	Justification/regverdiging
P	Penalty e.g. for no units, incorrect rounding off etc./pennaliseer vir eenhede,af rond ens.
Re	Reason/rede
R	Rounding /af rond
NPU/NPR	No Penalty for units/ No Penalty for rounding.
AO	Answer only, full marks/antwoord alleen vol punte.

=

Q/V	SOLUTION	EXPLANATION	T&L
1.2.4	KUAI SHOU✓✓	2RT correct answer (2)	D L1 E
4.2.1	Value of D in thousands of rands = $601\,228 - (141\,319 + 130\,692 + 97\,390 + 2434)$ ✓✓ = $601\,228 - 371\,835$ = $229\,393$ ✓	1MA subtraction from 601 228 1RT 4 correct values 1CA Simplification (3)	F L2 M
5.2.4	Monthly amount billed in 2022. = $(50kwh \times R0) + (300kwh \times R1.7322) + (250kwh \times R2.4087) + (750kwh \times R2.8016)$ ✓✓ = $R519.66 + R602.18 + R2\,101.20$ = $R3\,223.04$ ✓ Monthly amount billed in 2023 = $R3\,143.12 + (350 \times R3.8107)$ ✓ = $R3\,143.12 + R1\,333.75$ = $R4\,476.87$ ✓ Monthly increase = $R4\,476.87 - R3\,223.04$ ✓ = $R1\,253.83$ ✓ Annual increase = $R1\,253.83 \times 12$ = $R15\,045.96$ ✓	1RT all correct kwh 1MA multiplying with the correct tariffs 1CA simplification 1MA multiplying and adding correct values 1CA simplification 1MCA subtracting correct amounts 1CA simplification 1CA simplification (8)	F L3 D



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**MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA**

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

**MATHEMATICAL LITERACY P1
SEPTEMBER 2024**

MARKS: 150

TIME: 3 hours

This question paper consists of 13 pages, 1 answer sheet and an addendum with 2 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions.

ANSWER SHEET 1 for QUESTION 2.1.3
ANNEXURE A for QUESTION 4.2
ANNEXURE B for QUESTION 5.1
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 calculations clearly.
7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

- 1.1 TABLE 1 below shows the Trans African Concessions toll tariff adjustments on the N4 Toll route for the Maputo corridor which came into effect on 1 March 2023.

**TABLE 1: TRANS AFRICAN CONCESSION TOLL TARIFF ADJUSTMENTS
ON THE N4 TOLL ROUTE FOR THE MAPUTO CORRIDOR**

ROUTE	PLAZA	CLASS1	CLASS 2	CLASS 3	CLASS 4
N4 TOLL ROUTE	Donkerhoek Ramp	R15,00	R21,00	R31,00	R59,00
	Cullinan Ramp	R19,00	R31,00	R46,00	R76,00
	Diamond Hill Mainline	R45,00	R63,00	R118,00	R195,00
	Valtaki Ramp	R35,00	R49,00	R72,00	R162,00
	Ekandustria Ramp	R28,00	R42,00	R58,00	R116,00
	Middelburg Mainline	R75,00	R162,00	R246,00	R323,00
	Machado Mainline	R112,00	R310,00	R452,00	R646,00
	Nkomazi Mainline	R84,00	R172,00	R249,00	R359,00

[www.tracn4.co.za]

Use TABLE 1 above to answer the questions that follow.

- 1.1.1 What is the name of the company that published the above tariffs? (2)
- 1.1.2 State whether the tariffs for the different classes in TABLE 1 are discrete or continuous. (2)
- 1.1.3 Identify the plaza and its class that charges R58,00. (2)
- 1.1.4 Arrange, in descending order, the tariffs for class 3. (2)
- 1.1.5 The amount payable for the Middelburg Mainline (class 4) is R323,00.
Round off the tariff to the nearest 1000. (2)
- 1.1.6 Write down the modal tariff from class 1 to class 4. (2)
- 1.1.7 Determine the difference between the tariffs of Cullinan Ramp and Machado Mainline in class 3. (3)
- 1.1.8 The probability of paying a tariff less than R60,00 in class 3 is 0,375.
Write down this probability as a fraction in its simplest form. (3)

- 1.2 Jacob bought three stoves from Game stores for himself, his mother and mother-in-law to mitigate the effects of load shedding.

Below is a receipt received from Game stores.

A RECEIPT FROM GAME STORES



Messtores (Pty) Ltd trading as game 01/05/2023 02:08pm
 Game Nelspruit Ilanga Mall
 SHOP 7 ILANGA MALL
 N4 Silver Parks Oaks Flamboyant STREET

RECEIPT

Description	Quantity	Unit Cost	Discount on Unit Cost	Cost Price
Hisense 90cm Standalone Gas Stove	2	R12 499,00	R625,00	R23 748,00
Univa 4 Burner Gas Stove with Gas Oven	1	R5 999,00	R1 000,00	R4 999,00
Total for the 3 items				R28 747,00

Note: All prices are inclusive of VAT @ 15%

[Adapted from a Gamestoresreceipt]

Use the information above to answer the questions that follow.

- 1.2.1 In which month was this purchase done? (2)
- 1.2.2 Write the acronym VAT in full. (2)
- 1.2.3 Identify the Game store where this purchase was made. (2)
- 1.2.4 Determine the unit cost of a Hisense 90cm Standalone Gas Stove after the discount. (2)
- 1.2.5 Show how the total cost of R28 747,00 was calculated. (2)

[28]

QUESTION 2

- 2.1 On the 10th of September 2023 the Zulu Nation had its annual reed dance which was held at KwaNongoma in Kwazulu-Natal. On the day Mandla decided to conduct his business of selling bead necklaces.

It cost him R15,00 to make ONE bead necklace. He calculated that the daily fixed cost was R100,00 and he would be able to sell 100 bead necklace per day. He will sell each bead necklace at R24,00.

Use the information above to answer the questions that follow.

- 2.1.1 TABLE 2 shows the income from the sale of bead necklaces.

TABLE 2: INCOME FROM THE SALE OF BEAD NECKLACES

Number of bead necklaces (n)	0	20	30	40	80	100
Income in rand (R)	0	480	720	A	1 920	2 400

- (a) Determine the value of A in TABLE 2 above. (2)
- (b) Write down an equation that can be used to calculate the income. (2)
- (c) Identify the independent variable in TABLE 2. (2)
- 2.1.2 Mandla uses the following formula to determine the cost price of the bead necklace.

$$\text{Cost} = \text{R}100,00 + \text{R}15,00 \times n, \text{ where } n = \text{number of bead necklace(s)}$$

TABLE 3 shows the cost price for a number of bead necklace.

TABLE 3: COST PRICE OF A NUMBER OF BEAD NECKLACES

Number of bead necklaces (n)	0	B	30	55	80	100
Cost price in rand (R)	100	250	550	925	1 300	1 600

- Calculate the value of B in TABLE 3 above. (3)
- 2.1.3 The graph on ANSWER SHEET 1 shows the total income for selling up to 100 bead necklaces. Use the information in TABLE 3 to draw another graph representing the cost from the selling of up to 100 bead necklaces. (3)

2.1.4 Use the tables or graphs on ANSWER SHEET 1 to answer the questions that follow.

(a) Explain the meaning of the word *break-even* in the context of the question. (2)

(b) If the selling price is increased, write down, with a reason whether the break-even point will be lower or higher. (3)

2.2 Mr Ndlovu who owns a 2022 VW Amarok with a current value of R462 520,00. He travels 1 650km on average per month.

He claims every month for using his vehicle. His monthly travel allowance consists of a predetermined amount for the value of the vehicle as well as fuel maintenance costs.

Below is TABLE 4 indicating how to claim.

TABLE 4: THE CURRENT VALUE OF VEHICLE AND FIXED TRAVEL, FUEL AND MAINTENANCE CLAIMS

Current value of vehicle	Claim		
	Fixed travelling (R/annum)	Fuel (c/km)	Maintenance (c/km)
≤ to R95 000	29 836	131,7	40,9
> R95 000 and ≤ R190 000	52 889	147,0	51,1
> R190 000 ≤ R285 000	76 033	159,7	56,3
> R285 000 ≤ R380 000	96 197	171,8	61,5
> R380 000 ≤ R475 000	116 438	183,8	72,3
> R475 000 ≤ R570 000	137 735	210,8	88,6
> R570 000 ≤ R665 000	159 031	218,0	105,5
> R665 000	159 031	218,0	105,5

[Adapted from www.acino-pharma.com]

Use TABLE 4 and the information above to answer the questions that follow.

2.2.1 Show that Mr Ndlovu's quarterly fixed travelling claim is R29 109,50. (2)

2.2.2 Mr Ndlovu likes the newly released 2023 VW Amarok which costs R1 050 000,00.

Calculate, in rands, the maintenance claim if he decides to buy the vehicle. (4)

2.2.3 Mr Ndlovu decides not to buy the newer vehicle. He states that he could claim back R10 446,62 after tax is deducted for his monthly travelling allowance. He will be taxed at 25% of the actual amount that he can claim.

Show by means of calculations whether his statement is valid.

You may use the following formula:

$$\text{Claim} = \text{Monthly fixed travelling claim} + \text{km driven} \times (\text{fuel claim} + \text{maintenance claim}) \quad (9)$$

2.3 Eskom has announced that over 12 months of the 2024 financial year, commencing 01 July 2024, a 18,65% increase will be applicable to all standard domestic tariff customers.

A standard domestic tariff charge for home light 2 is R2, 63969 VAT inclusive.

2.3.1 Calculate the new tariff amount without VAT, rounded to the nearest ten, for a domestic tariff charge for home light 2 of R2, 63969. (7)

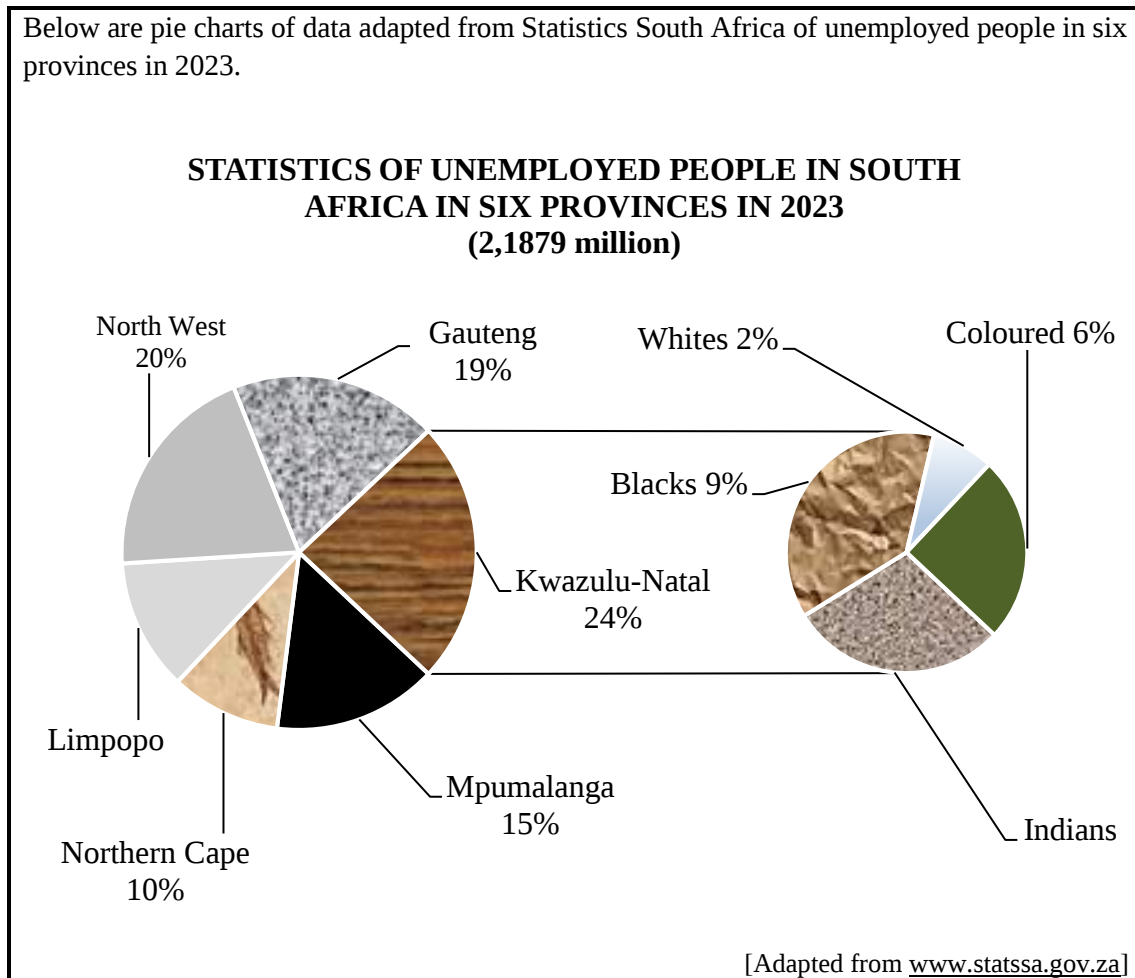
2.3.2 Electricity has been expensive over the years given the recent tariff hikes by Eskom.

Give one way of saving electricity at home to save money. (2)

[41]

QUESTION 3

- 3.1 Below are pie charts of data adapted from Statistics South Africa of unemployed people in six provinces in 2023.



Use the pie charts above to answer the questions that follow.

- 3.1.1 What is a possible data collection method that was used to collect the above data? (2)
- 3.1.2 Write down 2,1879 million in thousands. (2)
- 3.1.3 Determine the percentage allocated for Limpopo in 2023. (3)
- 3.1.4 Calculate the percentage allocated for the Indian population in 2023. (3)
- 3.1.5 The population of blacks in Kwazulu-Natal is 169 911.
Verify, showing ALL calculation, whether this statement is correct. (4)
- 3.1.6 State another type of graph that could be used to represent the data above. (2)

- 3.1.7 Determine, rounded to one decimal, the probability of randomly selecting a population group in Kwazulu-Natal category that is not Indian. (5)
[21]

QUESTION 4

- 4.1 The number of entries of selected subjects registered with the department of basic education in 2020 and 2021 are listed below. TABLE 5 provides information on the number of candidates who registered in 2020 and 2021. Some values are omitted.

TABLE 5: THE NUMBER OF ENTRIES REGISTERED IN 2020 AND 2021

NAME OF SUBJECT	NUMBER ENTERED			
	2020	2021	Increase	% Increase (2020 to 2021)
Accounting	92 767	105 894	13 127	14,15
Agricultural Sciences	96 155	123 990	27 835	28,95
Business Studies	207 045	243 843	36 798	17,77
Geography		P	71 026	
History	173 498	227 448	53 950	31,10
Life Sciences	319 228	384 216	64 988	20,36
Mathematical Literacy	341 363	441 067	99 431	29,13
Mathematics	Q	259 143	25 882	11,07
Physical Sciences	174 310	196 968	22 658	13,00

[Adapted from www.dashboard.gov.za]

Use TABLE 5 above to answer the questions that follow.

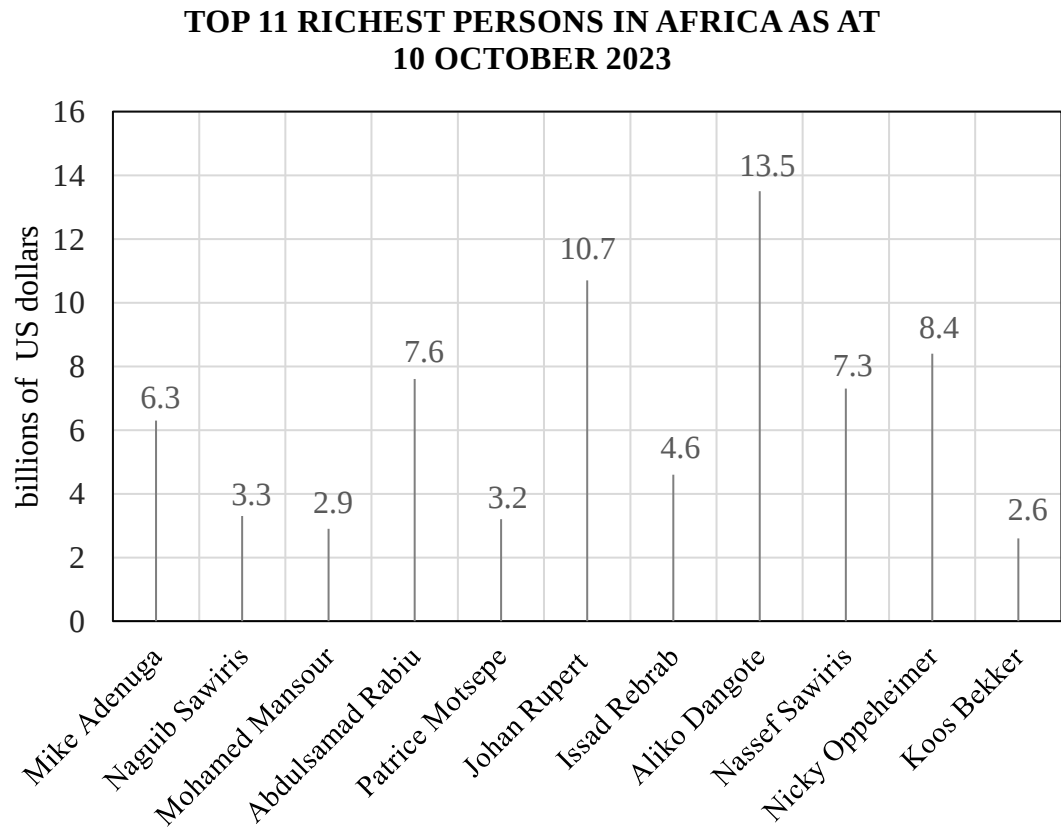
- 4.1.1 Write down, in words without using numerals, the number of History candidates who enrolled in 2021. (2)
- 4.1.2 Calculate the value of **Q**, the number of entries of Mathematics in 2020. (4)
- 4.1.3 The mean total number of entries for 2021 is 260 136.
Calculate **P**, the value of the number of entries for Geography. (4)
- 4.1.4 The probability, as a decimal, of randomly selecting a subject whose increased number of entries was greater than 30 000 is 0,56.

Show with calculations whether you agree or disagree with the statement above. (3)
- 4.1.5 101 schools in Mpumalanga are Mathematics, Sciences, Technology Academies (MSTA). The department of basic education projected that the number of entries for Physical Sciences in 2022 would be more than 215 000 if it increased by 10% from 2021.

Verify, showing ALL calculations, whether the statement is CORRECT. (5)

4.2 The graph below shows the top eleven richest persons in Africa.

ANNEXURE A shows a bar graph of top ten richest persons in the world.



[Source: www.forbes.com]

Use the graph above and ANNEXURE A to answer the questions that follow.

4.2.1 Write down the names of billionaires in Africa whose net worth is between 7,4 billion US dollars and 9 billion US dollars. (2)

4.2.2 Identify the name and amount of the fourth richest persons in the world. (3)

- 4.2.3 TABLE 6 below shows the exchange rate for two countries on 23 December 2023.

TABLE 6: EXCHANGE RATE FOR TWO CURRENCIES

CURRENCY	ZAR PER UNIT	UNITS PER ZAR
Euro	20,6011	0,048541
US dollar	18,6035	0,537533

www.standardbank.co.za/forex

Convert, to three decimals, 13% of Patrice Motsepe`s riches into Euros. (7)

- 4.2.4 The combined net worth of all top 11 richest African persons makes a third of Elon Musk` net worth.

Show by means of calculations whether you agree or disagree with the statement above.

(7)

[38]

QUESTION 5

- 5.1 Ben works as a superintendent at a regional hospital. He was 27 years when he started working in January 1985 as a nurse and became a superintendent in December 2023. He has a wife and three children under his medical aid.

TABLE 7 on ANNEXURE B shows the SARS income tax tables for 2023/2024.

Use ANNEXURE B to answer the questions that follow.

- 5.1.1 Ben earned a daily taxable income of R701,37 before her promotion.

In which tax bracket did he fall, based on the taxable income? (3)

- 5.1.2 Which tax rebates does he qualify for? (3)

- 5.1.3 Ben earns taxable income of R809 500 as a superintendent in 2023/2024.

Calculate the amount of monthly tax Ben must pay for the 2023/2024 tax year. (9)

- 5.2 TABLE 8 below shows the composition of certain food types in the human diet per 100g units.

TABLE 8: COMPOSITION OF FOOD TYPES IN THE HUMAN DIET PER 100 GRAMS UNITS

FOOD TYPE	ENERGY (kJ)	PROTEIN (g)	FATS (g)	CARBOHYD RATES (g)	CALCIUM (mg)	IRON (mg)	VITAMIN A (ug)	VITAMIN C (ug)
Bacon	1983	18,0	52,0	0	15	0	0	0
Beans	376	7,0	22	65,9	25	17	298	29
Bread	1072	8,8	1,4	58,1	102	1,8	1,1	0
Butter	3230	0,2	87,3	0,1	1,7	0	2015	1,5
Milk	281	3,9	4,6	5,4	129	0,15	87	0,1

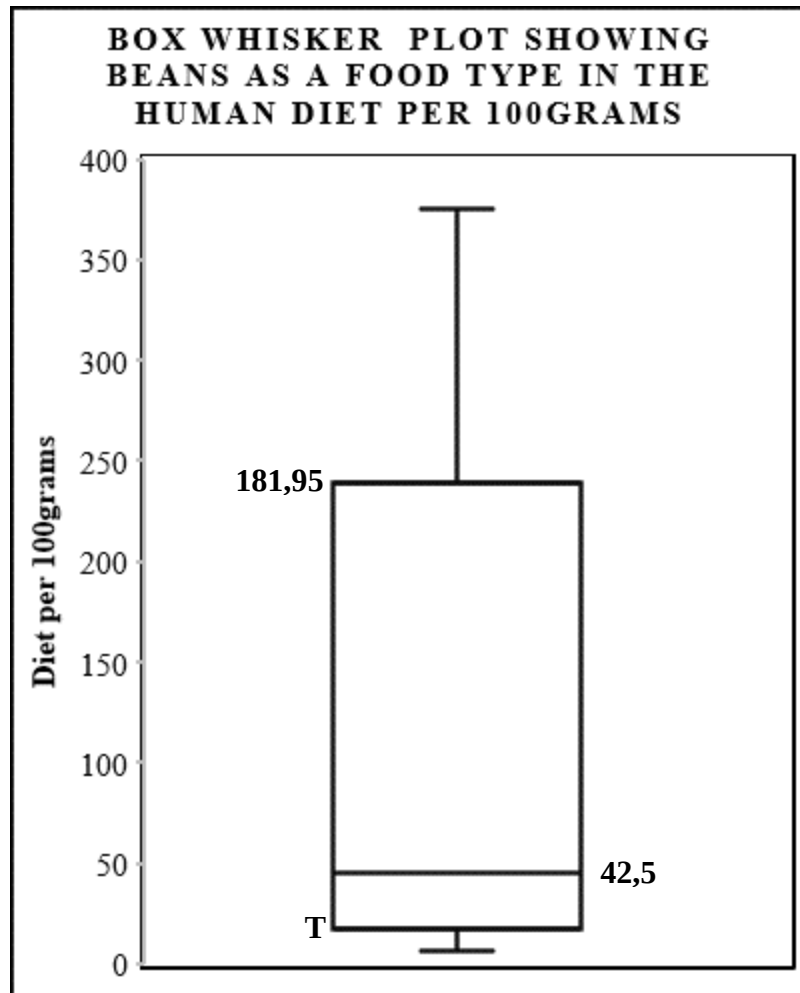
[Adapted from: www.fao.org]

Use TABLE 8 above to answer the questions that follow.

- 5.2.1 Write down the protein outlier of all the food types. (2)

5.2.2 Show that the median food type of the milk is 46,2. (3)

5.2.3 The box whisker plot below represents beans as a food type in the human diet per 100 grams.



Use the box whisker plot to answer the question that follow.

The interquartile range of the data above is 162,45.

Calculate, **T**, the lower quartile (Q₁)

You may use the following formula:

$$\text{IQR} = Q_3 - Q_1$$

(3)
[23]

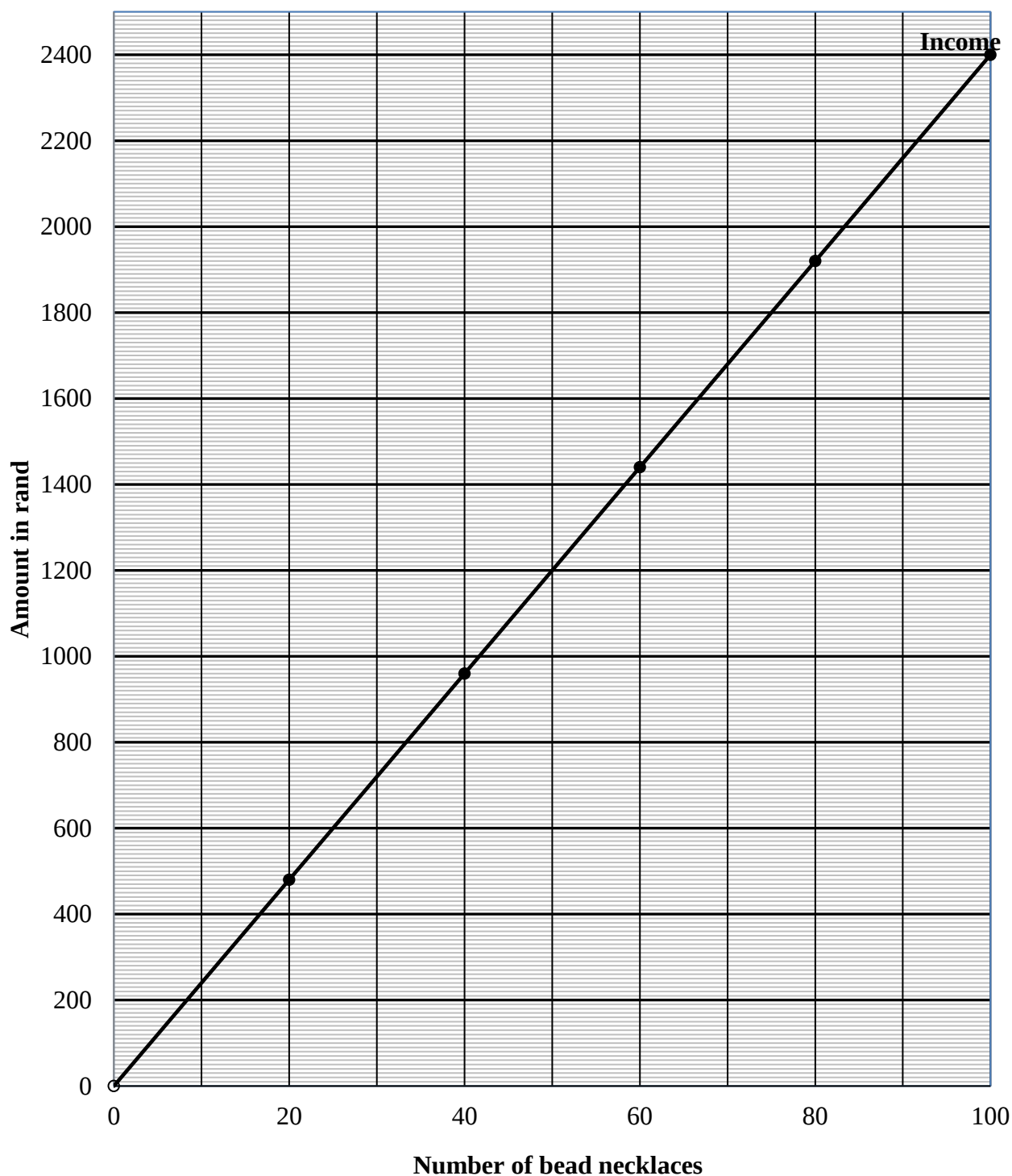
TOTAL: 150

NAME(S) AND SURNAME:

GRADE 12:

ANSWER SHEET 1

QUESTION 2.1.3

INCOME AND COST GRAPHS OF MAKING AND SELLING BEAD NECKLACES



education

**MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA**

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

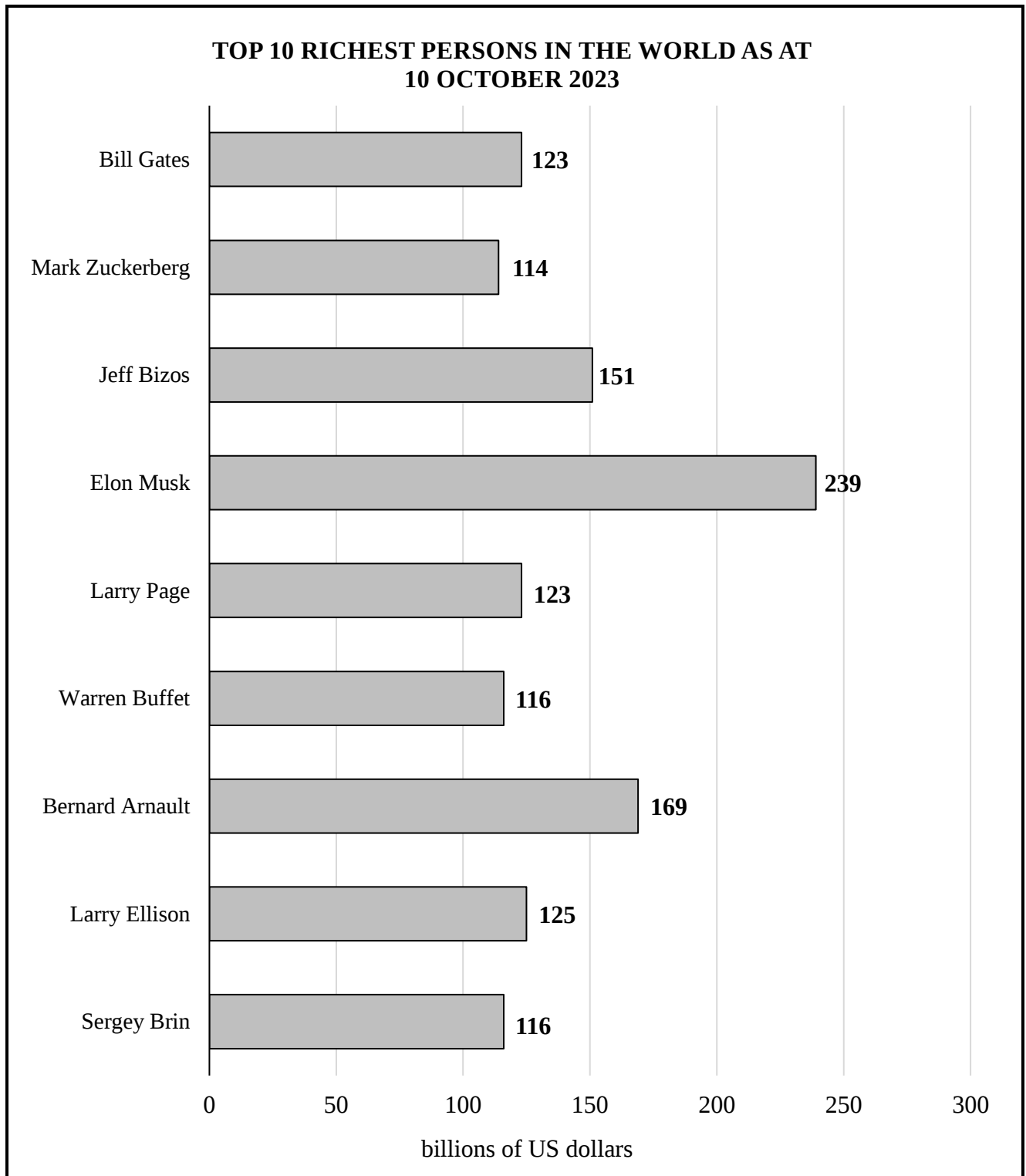
MATHEMATICAL LITERACY P1

ADDENDUM

SEPTEMBER 2024

MARKS: 150

This addendum consists of 3 pages with 2 annexures.

ANNEXURE A**QUESTION 4.2**[Source: www.forbes.com]

ANNEXURE B**QUESTION 5.1****TABLE 7: TAX RATES FOR 2023/2024 TAX YEAR (1 March 2023 – 29 February 2024)**

2023/2024 SARS Tax Table		
Taxable Income (R)		Rate of Tax (R)
A	0 – 237 100	18% of taxable income
B	237 101 – 370 500	42 678 + 26% of taxable income above 237 100
C	370 501 – 512 800	77 362 + 31% of taxable income above 370 500
D	512 801 – 673 000	121 475 + 36% of taxable income above 512 800
E	673 001 – 857 900	179 147 + 39% of taxable income above 673 000
F	857 901 – 1 817 000	251 258 + 41% of taxable income above 857 900
G	1 817 001 – and above	644 489 + 45% of taxable income above 1 817 000
TAX REBATES		TAX THRESHOLD
Primary rebate:		R95 750
Secondary rebate: (Persons 65 to 74 of age)		R148 217
Tertiary rebate: (Persons 75 years and older)		R165 689
MONTHLY MEDICAL SCHEME FEES TAX CREDITS		
Main member		R364
First dependant		R364
Each additional dependant		R246

[Source: www.sars.gov.za]



education

MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE
NASIONALE SENIOR SERTIFIKAAT

GRADE / GRAAD 12

MATHEMATICAL LITERACY P1 /
WISKUNDIGE GELETTERDHEID V1

SEPTEMBER 2024

MARKING GUIDELINES / NASIENRIGLYNE

MARKS: 150

<i>Symbol/ Kode</i>	<i>Explanation / Verduideliking</i>
M	Method/Metode
MA	Method with Accuracy/Metode met akkuraatheid
CA	Consistent Accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from the table/graph/map/diagram/document <i>Lees vanaf tabel/grafiek/kaart/diagram/document</i>
SF	Correct substitution in a formula/Korrekte vervanging in 'n formule
O	Opinion/Example/Explanation/Opinie/Voorbeeld/Verduideliking
P	Penalty e.g. for no units, incorrect rounding off, etc <i>Penalisasie, bv. Vir geen eenhede, verkeerde afronding, ens.</i>
R	Rounding off/Afronding
NPR	No penalty for rounding/Geen penalisasie vir afronding nie
AO	Answer only/Slegs antwoord
MCA	Method with constant accuracy/Metode met volgehoue akkuraatheid

These marking guidelines consist of 18 pages.

Hierdie nasienriglyn bestaan uit 18 bladsye.

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in all aspects of the marking guidelines; however, it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra incorrect item presented.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake one mark is deducted.
- A conclusion mark can only be given if relevant calculations precede it.
- No penalty for rounding (NPR) if the first decimal is correct.

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.*
- *Volgehoue akkuraatheid (CA) word in alle aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem het en ekstra antwoorde gee, penaliseer vir elke ekstra verkeerde item.*
- *Afronding tel as 'n afsonderlike punt.*
- *Die algemene beginsel van merk as 'n leeder een fout maak, word een punt afgetrek.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.*
- *Geen penalisering vir ronding (NPR) as die eerste desimaal korrek is nie.*

QUESTION/VRAAG 1 [28 MARKS/PUNTE] ANSWER ONLY–FULL MARKS/SLEGS ANTWOORD - VOLPUNTE			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
1.1.1	Trans African Concessions ✓✓ A	2A name of company (2)	D L1 E
1.1.2	Discrete/Diskreet ✓✓ A	2A correct classification (2)	D L1 E
1.1.3	Ekandustria Ramp/Ekandustria oprit ✓ RT Class 3/Klas 3 ✓ RT	1RT reading the correct name 1RT reading the correct class (2)	D L1 E
1.1.4	✓RT R452,00; R249,00; R246,00; R118,00; R72,00; R58,00; R46,00; R31,00✓A	1RT correct values 1A correct order (2)	D L1 E

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
1.1.5	R0,00✓✓ R	2R correct rounded amount (2)	F L1 E
1.1.6	Mode / Modal R31.00✓RT and R 162✓ RT	2A correct modal amount (2)	F L1 E
1.1.7	Difference/Verskil = R452,00 – R46,00 ✓RT = R406,00 ✓CA	1RT reading correct amounts 1M subtracting amounts 1CA correct difference (3)	F L1 M
1.1.8	P (less than/minder as R60,00) = $\frac{375}{1000}$ ✓ A = $\frac{3}{8}$ ✓ S	1A numerator 1A denominator 1S simplification (3)	P L1 E
1.2.1	May /Mei ✓✓ RT	2RT reading from the table (2)	F L1 E
1.2.2	Value Added Tax/Belasting of toegevoegde waarde ✓✓ A	2A correct acronym (2)	F L1 E
1.2.3	Nelspruit Ilanga Mall ✓✓ RT	2RT reading from the table (2)	F L1 E
1.2.4	✓MA R12 499 – R625 R11 874 ✓A OR/OF $\frac{R23\,748}{2}$ ✓MA R11 874 ✓A	1MA subtracting correct values 1A simplification OR/OF 1M dividing by 2 1A simplification (2)	F L1 M
1.2.5	✓RT R23 748,00 + R4 999,00 ✓MA R28 747,00	1RT reading from the table 1MA adding correct values (2)	F L1 E
		[28]	

QUESTION/VRAAG 2 [41 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
2.1.1 (a)	$A = 40 \times R24,00 \checkmark \text{MA}$ $= R960,00 \checkmark \text{CA}$ OR/OF $A = \frac{40 \times R480,00}{20} \checkmark \text{MA}$ $= R960,00 \checkmark \text{A}$ OR/OF $A = \frac{40 \times R720,00}{30} \checkmark \text{MA}$ $= R960,00 \checkmark \text{A}$ OR/OF $A = \frac{40 \times R1\,920,00}{80} \checkmark \text{MA}$ $= R960,00 \checkmark \text{A}$ OR/OF $A = \frac{40 \times R2\,400,00}{100} \checkmark \text{MA}$ $= R960,00 \checkmark \text{A}$ OR/OF 80 necklaces/halsoere = R1 920,00 $\frac{1}{2}$ of/van 80 necklaces/halsnoere is 40 $\frac{1}{2}$ of/van R1 920 is R960,00 $\therefore A = R960,00 \checkmark \text{CA}$ OR/OF 20 bead necklaces/kralehalssnoer $\times 2$ = 40 bead necklaces/kralehalssnoer $\therefore A = R480,00 \times 2 \checkmark \text{MA}$ = R960,00 $\checkmark \text{CA}$	1MA multiply by R24,00 1CA selling price OR/OF 1MA multiplying and dividing using correct ratio and proportion 1A simplification OR/OF 1MA trial and error method 1CA selling price OR/OF 1MA adding 1CA selling price AO (2)	F L1 E

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
2.1.1 (b)	Income in rand/<i>Inkomste in rand</i> = R24,00 × number of bead necklaces/<i>aantal krale halssnoer</i> ✓✓A OR/OF Income in rand/<i>Inkomste in rand</i> = R24,00 × <i>x</i> ✓A <i>x</i> = number of bead necklaces ✓A <i>/die aantal kralehalsnoere</i>	2A formula OR/OF 1A Income in rand = R24,00 × <i>x</i> (in equation) 1A explaining variable (2)	F L2 E
2.1.1 (c)	✓✓RT Number of beads necklaces/<i>Aantal krale halssnoer</i>	2RT independent variable (2)	F L1 E
2.1.2	R250,00 = R100,00 + (R15,00 × <i>n</i>) R250,00 – R100,00 = R15,00 × <i>n</i> ✓M $\frac{R150}{15} = n$ ✓S 10 = <i>n</i> B = 10 ✓CA OR/OF ✓M R100 + R15,00 × 10 = R250,00 ✓S B = 10 ✓CA	1M changing subject of formula 1S simplification 1CA simplification OR/OF 1M trial and error 1S simplification 1CA simplification AO (3)	F L2 M

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L																					
2.1.3	INCOME AND COST GRAPHS OF MAKING AND SELLING BEAD NECKLACES <table><caption>Data points for Income and Cost Graphs</caption><tr><th>Number of bead necklaces</th><th>Income (rand)</th><th>Cost (rand)</th></tr><tr><td>0</td><td>0</td><td>100</td></tr><tr><td>20</td><td>400</td><td>400</td></tr><tr><td>40</td><td>800</td><td>700</td></tr><tr><td>60</td><td>1200</td><td>1000</td></tr><tr><td>80</td><td>1600</td><td>1300</td></tr><tr><td>100</td><td>2000</td><td>1600</td></tr></table> 1A start of graph – cost price (0;100) 1A end of graph – cost price (100;1 600) 1A joining the points in a straight-line graph	Number of bead necklaces	Income (rand)	Cost (rand)	0	0	100	20	400	400	40	800	700	60	1200	1000	80	1600	1300	100	2000	1600		F L2 E
Number of bead necklaces	Income (rand)	Cost (rand)																						
0	0	100																						
20	400	400																						
40	800	700																						
60	1200	1000																						
80	1600	1300																						
100	2000	1600																						

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
2.1.4 (a)	The cost price for the number of bead necklaces sold and the selling price of that number of bead necklaces is the same (equal). No profit or loss/<i>Die kosprys vir die getal krale halssnoer wat verkoop is en die verkoopprys vir daardie getal is dieselfde (gelyk). Geen wins of verlies.</i> ✓✓A OR/OF Cost price = Selling price/ <i>Kosprys = Verkoopprys</i> ✓✓A OR/OF Income = Expenses/<i>Inkomste = Uitgawes</i> ✓✓A OR/OF The profit and loss are equal to 0/<i>Die wins en verlies is gelyk aan 0.</i> ✓✓A	2A break-even OR/OF 2A break-even OR/OF 2A break-even OR/OF 2A break-even (2)	F L1 E
2.1.4 (b)	✓A Higher/<i>Verhoog</i> If the income is lower, then the break-even point will be reached at a later stage of sales. ✓✓O <i>/As die inkomste laer is, sal die gelykbreekpunt eers later plaasvind</i>	1A higher 2O reason (3)	F L4 D
2.2.1	✓RT $\frac{R116\,438}{4} \checkmark M$ R29 109,50	1RT reading from the table 1M dividing by 4 (2)	F L2 E
2.2.2	✓MA 1 650km × 105,5c/km 174 075 cents ✓S $\frac{174\,075 \text{ cents}}{100} \checkmark M$ R1 740,75 ✓CA	1MA multiplying by 105,5 1S amount in cents 1M dividing by 100 1CA maintenance claim (4)	F L3 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
2.2.3	<i>Maandlikse vaste reis eiste</i> Monthly fixed travelling claim = $\frac{R29\ 109,50}{3}$ ✓M = R9 703,17 ✓A OR <i>Maandlikse vaste reis eiste</i> Monthly fixed travelling claim = $\frac{R116\ 438}{12}$ ✓M = R9 703,17 ✓A ✓M R9 703,17 + 1 650 × (183,8 + 72,3) R9 703,17 + 422 565 cents R9 703,17 + R4 225,65 ✓C R13 928,82 ✓CA ✓MA $R13\ 928,82 - \frac{25}{100} \times R13\ 928,82$ ✓M R10 446,62 ✓CA ✓J His statement is correct. /Sy stelling is korrek	CA from question 2.2.1 1M dividing by 3 months 1A monthly claim OR 1M dividing by 3 months 1A monthly claim 1M addition of all costs 1C conversion 1CA amount claimed 1MA percentage calculation 1M subtracting 25% 1CA answer 1J Reasoning (9)	F L4 D
2.3.1	New tariff / Nuwe tarief ✓MA = $\frac{18,65}{100} \times R2,63969 + R2,63969$ ✓M = R0,492302185 + R2,63969 = R3,131992185 ✓CA Amount with no VAT /Bedrag sonder BTW ✓M = $\frac{R3,131992185}{1,15}$ ✓MA = R2,72 ✓A = R2,70 ✓R OR/OF	1MA calculating the correct percentage 1M adding amounts 1CA new tariff 1M correct value 1MA dividing by 1,15 1A correct price 1R rounding OR/OF	F L3 M

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
	New tariff / <i>Nuwe tarief</i> $= \frac{118,65}{100} \times R2,63969$ $= R3,13199285$ Amount with no VAT/<i>Bedrag sonder BTW</i> $= R3,131992185 - \left(\frac{15}{115} \times R3,131992185\right)$ $= R2,72$ $= R2,70$ OR/OF New tariff/<i>Nuwe tarief</i> $= \frac{18,65}{100} \times R2,63969 + R2,63969$ $= R0,492302185 + R2,63969$ $= R3,131992185$ Amount with no VAT /<i>Bedrag sonder BTW</i> $= R3,131992185 \times \frac{100}{115}$ $= R2,72$ $= R2,70$	1M multiplying by 1,1865 1M multiplying correct tariff 1CA new tariff 1M correct amount 1MA subtracting correct value 1A simplification 1R rounding OR/OF 1MA calculating the correct percentage 1M adding amounts 1CA new tariff 1M correct value R3,13199218 1MA dividing by 115 and multiply by 100 1A simplification 1R rounding (7)	
2.3.2	✓✓O Switch off all lights in the morning/<i>Skakel ligte af in die oggend</i> OR/OF ✓✓O Switch off geysers or pool pumps when not needed/<i>Skakel die geiser of swembadpomp af as dit nie gebruik word nie</i> OR/OF ✓✓O Don't fill up the kettle when boiling water to make one cup of tea./<i>Moet nie die kettel vol maak as jy slegs 1 beker tea gaan maak nie.</i>	2O opinion	F L4 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
	OR/OF ✓✓O Switch off all lights in bedroom whilst watching TV in the lounge./ISKakel alle ligte af in die kamer terwyl daar TV gekyk word in die sitkamer	(2)	
		[41]	

QUESTION/VRAAG 3 [20 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
3.1.1	Questionnaires OR Interviews OR Survey OR document analysis <i>Vraelys OF Onderhoud OF Meningspeiling (opname) OF analyse ✓✓A</i>	2A means of collecting data (2)	D L1 E
3.1.2	$\checkmark\checkmark A$ 2 187,9 thousand/ <i>duisend</i>	2A correct number (2)	D L1 E
3.1.3	$\checkmark MA$ $A = 100\% - (15\% + 10\% + 20\% + 24\% + 19\%)$ $= 100\% - 88\% \quad \checkmark M$ $= 12\% \quad \checkmark CA$ OR/OF $\checkmark M \quad \checkmark MA$ $A = 100\% - 15\% - 10\% - 20\% - 24\% - 19\%)$ $= 12\% \quad \checkmark CA$	1MA adding all correct values 1M subtracting from 100% 1CA simplification OR/OF 1MA subtracting correct values 1M subtracting from 100% 1CA simplification (3)	D L2 M
3.1.4	$\checkmark M$ $B = 24\% - (6\% + 2\% + 9\%)$ $= 24\% - 17\% \quad \checkmark MA$ $= 7\% \quad \checkmark CA$	1M adding percentages 1MA subtracting from 24% 1CA simplification (3)	D L2 D
3.1.5	Black population/ <i>Swart populasie</i> $\checkmark MA \quad \checkmark RT$ $= \frac{9}{100} \times 2\,187\,900 \quad \checkmark O$ $= 196\,911$ The statement is not correct/ <i>Die stelling is nie korrek nie</i> OR/OF Black population/ <i>Swart populasie</i> $\checkmark MA \quad \checkmark RT$ $0,09 \times 2\,187,9 \text{ thousand/Duisend}$ $= 196,911 \text{ thousand/duisend} \quad \checkmark O$ The statement is not correct/ <i>Die stelling is korrek</i>	1RT correct total 1MA multiplying the value by $\frac{9}{100}$ 1O conclusion OR/OF 1RT correct total 1MA multiplying the value by 0,09 1O conclusion (3)	D L4 M
3.1.6	$\checkmark\checkmark A$ Bar graph or stacked bar graph/ <i>Staafgrafiek of Stapel staafgrafiek.</i>	2A type of graph (2)	D L2 E

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
3.1.7	Probability/Waarskynlikheid(/Kwazulu-Natal) = 24% $\checkmark$ RT $\checkmark$ MA $= 2\% + 6\% + 9\%$ $= 17\%$ Probability/Waarskynlikheid (not/nie Indian) $\checkmark$ M $= \frac{17}{24}$ $= 0,70833\ldots$ $\checkmark$ CA $= 0,7$ R	1RT correct values 1MA adding all values 1M dividing by 24 1CA simplification 1R rounding (5)	D L2 D
		[20]	

QUESTION/VRAAG 4 [38 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
4.1.1	Two hundred and twenty-seven thousand four hundred and forty-eight. ✓✓A <i>Twee honderd, sewe en twintig duisend vier honderd en agt en veertig.</i>	2A correct wording (2)	D L1 E
4.1.2	Entries/<i>Inskrywings</i> in 2020 = $259\,143 - 25\,882$ ✓✓RT ✓M $= 233\,315$ ✓CA OR/OF ✓✓A $Q \times 1,1107 = 259\,143$ $Q = \frac{259\,143}{1,1107}$ ✓S $Q = 233\,315$ ✓CA	2RT correct values 1M subtracting values 1CA simplification OR/OF 2MA increasing population 2022 by 1,1107 1S simplification 1CA population in 2022 (4)	D L2 M
4.1.3	$260\,136 = \frac{105\,964 + 123\,990 + 243\,843 + 227\,448 + 384\,216 + 441\,067 + 251\,143 + 196\,968 + P}{9}$ ✓RT ✓M $260\,136 = \frac{1\,982\,569 + P}{9}$ ✓MA $260\,136 \times 9 = 1\,982\,569 + P$ $P = 2\,341\,224 - 1\,982\,569$ ✓MA $P = 358\,655$ ✓CA	1RT correct values 1M adding values 1MA concept of mean 1MA changing the subject of the formula 1CA simplification (5)	D L2 D
4.1.4	$P(\text{entries greater than } 30\,000) = \frac{5}{9}$ ✓A ✓A $= 0,56$ ✓O Agreed with the statement./<i>Stem saam met die stelling</i>	1A numerator 1A denominator 1O conclusion (3)	P L3 E

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
4.1.5	New number of learners registered for physical Sciences in 2022/<i>Die aantal leerders geregistreerd vir Fiesiese Wetenskappe 2022</i> ✓RT $= 196\,968 \times \frac{10}{100}$ ✓M $= 19\,696,8$ ✓CA $= 196\,968 + 19\,696,8$ $= 216\,664,8$ $\approx 216\,664$ ✓CA ✓O Yes, the statement is correct. /Ja, haar stelling is korrek	1RT correct value 1M percentage calculation 1CA simplification 1CA simplification 1O conclusion (5)	D L4 M
4.2.1	Abdulsamad Rabiou ✓RT Nicky Oppenheimer ✓RT	1RT correct name 1RT correct name (2)	F L1 E
4.2.2	Larry Ellison ✓✓RT 125 billion US dollar/125 miljard VSA-dollars ✓A OR/OF 125 000 000 000 US dollar/VSA-dollars ✓A	2RT correct name 1A correct amount (3)	F L1 E
4.2.3	✓MA ✓RT $\frac{13}{100} \times 3,2$ billion US dollar/miljard VSA dollars 0,416 billion US dollar/miljard VSA-dollars ✓A US dollar per Euro/VSA-dollar per Euro $\frac{20,6011}{18,6035}$ ✓A 1 Euro = 1,107377644 US dollar/VSA-dollar ✓M $= 0,416$ billion/miljard US dollar $\times 1,107377644$ $= 0,3756622705$ billion Euros/miljard Euros ✓A $= 0,376$ billion Euros/miljard Euros ✓R OR	1MA percentage calculation 1RT correct value 1A simplification 1A exchange between euro and Us dollar 1M multiplying with exchange rate 1A simplification 1R rounding (7)	F L3 D

	$3\,200\,000\,000 \checkmark \text{RT} \times 18.6035 \checkmark \text{MA}$ $= \text{R } 59\,531\,200\,000 \checkmark \text{A}$ $= \frac{\text{R}59\,531\,200\,000}{20,6011} \checkmark \text{MA}$ $= 2\,889\,709\,733 \text{ Euro } \checkmark \text{A}$ $= 2\,889\,709\,733 \times \frac{13}{100} \checkmark \text{M}$ $= 375\,662\,270.50 \text{ Euro } \checkmark \text{A}$	MA percentage calculation 1 RT correct values 1A answer US D 1 A simplification 2 M multiplying by US Dollar 1 A simplification (7)	
4.2.4	Total net worth of all africans/<i>Totale net waarde van alle afrikaners</i> $= (6,3 + 3,3 + 2,9 + 7,6 + 3,2 + 10,7 + 4,6 + 13,5 + 7,3 + 8,4 + 2,6) \text{ billions US dollars/miljard VSA-dollars} \checkmark \text{RT} \checkmark \text{MA}$ $= 70,4 \text{ billions of US dollars/miljard VSA-dollars} \checkmark \text{CA}$ Elon Musk's third of net worth $= \frac{1}{3} \times 239 \text{ billion US dollars/miljard VSA-dollars} \checkmark \text{MA} \checkmark \text{RT}$ $= 79,67 \text{ billion US dollars/miljard VSA-dollars} \checkmark \text{CA}$ Disagree with the statement./ <i>Ek stem nie saam met die stelling nie</i> $\checkmark \text{O}$	1RT correct values 1MA adding correct values 1CA simplification 1MA multiplying by fraction 1RT correct amount 1CA simplification 1O conclusion (7)	F L4 D
		[38]	

QUESTION/VRAAG 5 [23 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
5.1.1	Annual Salary/<i>Jaarlikse salaris</i> $\checkmark M$ $R701,37 \times 365$ $R256\,000,05 \checkmark CA$ Bracket/<i>Belastingskerwe</i> 2 $\checkmark RTG$ OR/OF B $\checkmark RT$ OR/OF 237 001 – 370 500 $\checkmark RT$	1M multiplying by 365 1CA Simplification 1RT tax bracket (3)	F L2 M
5.1.2	Ben's age /<i>Ben se ouderdom</i> $\checkmark MA$ $(1985 - 2023) + 27 \text{ years}$ 38 years + 27 years 65 years $\checkmark A$ $\checkmark RT$ Primary and Secondary rebates/<i>Primêre en sekondere korting</i> OR/OF $R17\,235 + R9\,444 \checkmark RT$ OR/OF $R26\,679 \checkmark MA$	1MA calculating years as a working professional 1A simplification 1RT tax rebate 1MA adding R17 235 and R9 444 (3)	F L2 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
5.1.3	Monthly tax/Maandlikse belasting R673 001 R857 900 R179 147 + 39% of taxable income above R673 000 R179 147 + 39% (R809 500 – R673 000) ✓SF R179 147 + 39% × R136 500 ✓CA R179 147 + R53 235 R232 382 ✓CA Rebates /Korting R232 382 – R17 235 – R9 444 ✓MCA R205 703 ✓CA Medical Tax Credits/Mediese krediet R205 703 – (R364 × 2 + R246 × 3) × 12 ✓MCA R205 703 – R17 592 R188 111 ✓CA Monthly tax/Maandlike belasting = $\frac{R188\,111}{12}$ ✓M = R15 675,92 ✓CA	CA from question 5.1.1 & 5.1.2 1SF substitution 1CA simplification 1CA tax before rebates 1MCA subtracting rebates 1CA simplification 1MCA subtracting medical tax credits 1CA simplification 1M dividing by 12 1CA simplification (9)	F L3 M
5.2.1	18,0 ✓✓RT	2RT correct value (2)	D L1 E

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
5.2.2	$\begin{array}{cccccccc} & & \checkmark \text{RT} & & & & & \\ 0,1 & 0,15 & 3,9 & 4,6 & 5,4 & 87 & 129 & 281 \\ \\ \text{Median/Medianaan} = \frac{4,6 + 5,4}{2} & \checkmark \text{M} \\ = 46,2 & \checkmark \text{CA} \end{array}$	1RT correct values 1A arranging values 1M median concept (3)	D L2 M
5.2.3	The interquartile range / <i>Interkwartielomvang</i> $\text{IQR} = Q_3 - Q_1$ $162,45 = 181,95 - Q_1 \quad \checkmark \text{SF}$ $\checkmark \text{MA}$ $Q_1 = 181,95,5 - 162,45$ $Q_1 = 19,5 \quad \checkmark \text{CA}$	AO 1SF substituting into formula 1MA changing the subject of the formula 1CA simplification (3)	D L2 M
		[23]	

TOTAL/TOTAAL:150



DEPARTMENT OF EDUCATION
DEPARTEMENT VAN ONDERWYS
LEFAPHA LA THUTO
ISEBE LEZEMFUNDO

**PROVINSIALE VOORBEREIDENDE EKSAMEN/
PROVINCIAL PREPARATORY EXAMINATION**

GRAAD/GRADE 12

**WISKUNDIGE GELETTERDHEID/
MATHEMATICAL LITERACY**

VRAESTEL/PAPER 1

SEPTEMBER 2024

PUNTE/MARKS: 150

TYD/TIME: 3 uur/hours

**Hierdie vraestel bestaan uit 15 bladsye en 'n addendum van 4 bladsye./
This question paper consists of 15 pages and an addendum of 4 pages.**

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:

ANNEXURE A for QUESTION 2.1
ANNEXURE B for QUESTION 3.2
ANNEXURE C for QUESTION 4.1
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 calculations clearly.
7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Write neatly and legibly.

QUESTION 1

1.1

Takealot.com is the leading e-commerce retailer in South Africa. TABLE 1 below shows specials from the Takealot.com website.

TABLE 1: SPECIALS AT TAKELOT.COM
(ALL PRICES INCLUDE 15% VAT)

		
PRITT GLUE STICK 43 g × 3 PACK	PRITT GLUE STICK 43 g × 5 PACK	TREELINE GLUE STICK (36 g) non toxic – box of 12
Special price: R179,00	Special price: R301,00	Special price: R179,00
Normal price: R199,00	Normal price: R429,00	Normal price: R191,00

DELIVERY COST:

Standard Delivery (orders below R500)	R70,00
Standard Delivery (orders R500 or more)	FREE
Next Business Day Delivery * (orders R700 or more)	R75,00
Next Business Day Delivery * (orders below R700)	R90,00

**Premium delivery only available in Main Centres (Cape Town, KwaZulu-Natal, Johannesburg & Pretoria)*

NOTE: E-commerce is the trading of goods and services on the Internet.

[Adapted from www.takealot.com]

Use TABLE 1 to answer the questions that follow.

1.1.1 Calculate the discount amount (in rand) on a 5 pack Pritt Glue Stick. (2)

1.1.2 The probability of purchasing the Pritt glue stick 43 g × 3 pack is $\frac{1}{3}$.

Write this probability as a decimal. (2)

1.1.3 Calculate the special price for ONE Treeline Glue Stick. (3)

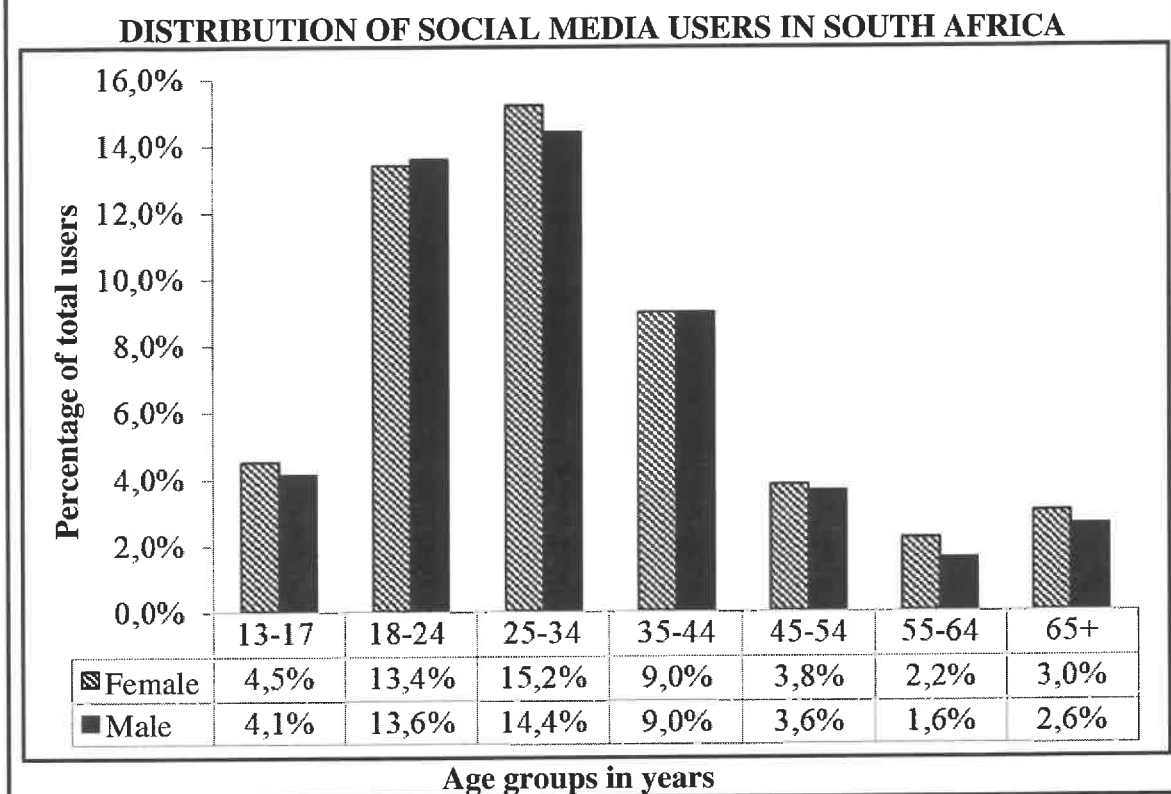
1.1.4 Write down the standard delivery cost for an order of R700. (2)

1.1.5 Mrs Gouws wants to buy a Treeline Glue Stick for each learner in her class of 27.

Calculate the number of boxes she needs to buy. (2)

1.2

The total population of South Africa on 8 April 2024 was 60 880 156, of which 26 056 706 were social media users. The graph below shows the distribution of social media users in South Africa, by age group and gender.

[Adapted from www.statista.com]

Use the graph to answer the questions that follow.

- 1.2.1 Write down the total number of social media users in South Africa on 8 April 2024 in words. (2)
- 1.2.2 Identify the age group in which the percentage male social media users outnumber the female users. (2)
- 1.2.3 Calculate the total percentage of participants aged 45 years and older. (3)
- 1.2.4 Determine the difference in percentage between the largest percentage males and smallest percentage males. (2)

1.3

An analysis of the average house selling prices across South Africa by the Seeff Property Group reveals that nine out of the top 10 of the most expensive suburbs are in Cape Town.

TABLE 2 below listed the top 10 most expensive suburbs in South Africa.

**TABLE 2: TOP 10 MOST EXPENSIVE SUBURBS IN SOUTH AFRICA
(PRICES IN MILLION RAND)**

	SUBURB	AREA	AVERAGE PRICE	HIGHEST PRICE ACHIEVED
1	Clifton	Atlantic Seaboard	25	150
2	Bantry Bay	Atlantic Seaboard	22	60
3	Llandudno	Atlantic Seaboard	19,95	33
4	Sandhurst	Sandton	A	54
5	Bishopscourt	Southern Suburbs	17,55	90
6	Higgovalle	City	16,2	33
7	Waterfront	Atlantic Seaboard	15,25	54
8	Fresnaye	Atlantic Seaboard	15	71,25
9	Camps Bay	Atlantic Seaboard	14,8	42
10	Constantia Upper	Southern Suburbs	13,1	70

[Adapted from <https://businessstech.co.za/>]

Use TABLE 2 to answer the questions that follow.

- 1.3.1 Write down the highest price achieved for a house in Fresnaye in full, using only numerals. (2)
- 1.3.2 Calculate the value of A if the average price in Sandton is 35,5% of the highest price achieved in Sandton. (2)
- 1.3.3 Write down as a simplified ratio the highest price achieved in the Southern Suburbs to the highest price achieved in the Atlantic Seaboard area. (3)
- 1.3.4 Determine the number of suburbs where the highest price achieved is above R60 000 000. (2)

[29]

QUESTION 2

2.1

The Johnson family consisting of Mr and Mrs Johnson aged 43 and 46 respectively, three children aged 13, 15 and 17, and a grandmother aged 65, planned to visit Table Mountain in Cape Town.

ANNEXURE A shows ticket prices for the cable car at Table Mountain.

Use ANNEXURE A and the information above to answer the questions that follow.

2.1.1 Calculate the number of people in the Johnson family that planned to visit Table Mountain. (2)

2.1.2 Calculate the percentage increase (rounded to the nearest percentage) in a student's return ticket price.

You may use the following formula:

$$\text{Percentage increase} = \frac{\text{ticket price 2024} - \text{ticket price 2023}}{\text{ticket price 2023}} \times 100\% \quad (4)$$

2.1.3 The family visited Table Mountain on Tuesday, 15 August 2024 after 13:00. They bought one-way tickets for all the children and return tickets for the adults.

Mr Johnson calculated that if the family visited Table Mountain five hours earlier that morning, the total cost for the tickets would have been R1 365.

Determine the amount the family have saved on the total cost of all the tickets by visiting Table Mountain in the afternoon compared to a visit at 8:00. (8)

2.1.4 Provide a reason why students often pay less than adults. (2)

2.2

Loadshedding is a reality in South Africa. Mr Johnson decides to invest in solar panels.

Given below is an advertisement for the solar panel system he intends to buy.

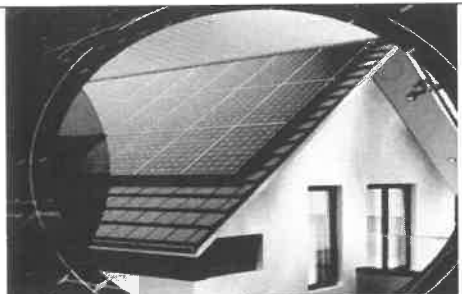
	Versofy SOLAR
	12 Panel system + Hybrid Inverter 25 kwh–28 kwh/day
	NOW R224 660
	WAS R? SAVE R14 340

TABLE 3 show the payment options for the solar panel system.

TABLE 3: PAYMENT OPTIONS

CASH PRICE:	R224 660 (including 15% VAT)
HIRE-PURCHASE:	
Deposit	R26 960
Monthly admin fee (not included in monthly instalment)	R105
Term agreement	60 months
Monthly instalment	R5 400

[Adapted from www.versofy.com]

Use the information above to answer the questions that follow.

2.2.1 Define the term *hire-purchase* within the given context. (2)

2.2.2 Calculate the VAT amount included in the cash price. (3)

2.2.3 Calculate the total cost of the solar panel system if he decides to use the hire-purchase option.

You may use the following formula:

Total cost = Deposit + total value of monthly instalments + admin fees (6)

2.2.4 Mr and Mrs Johnson will divide the monthly instalment of R5 400 in the ratio 5 : 3 respectively. Mr Johnson claims that his portion exceeds his wife's contribution by more than R1 300.

Verify, showing ALL calculations, whether his claim is valid. (6)

[33]

QUESTION 3

3.1

Globally, South Africa is the ninth largest producer and the fifth largest exporter of table grapes.

TABLE 4 below shows the regional production of table grapes in hectare per region in South Africa from 2018 to 2023.

TABLE 4: REGIONAL PRODUCTION OF TABLE GRAPES IN SOUTH AFRICA (PER HECTARE)

REGION	2018	2019	2020	2021	2022	2023
Northern Provinces	2 096	2 589	2 522	2 575	2 358	2 051
Orange River	6 147	6 195	5 857	5 626	5 768	5 778
Olifants River	1 318	1 185	A	1 168	1 184	1 145
Berg River	5 109	5 210	4 934	4 789	4 674	4 774
Hex River	6 397	6 619	6 563	6 406	6 394	6 240
GRAND TOTAL	21 067	21 798	21 100	20 564	20 378	19 988

[Adapted from www.satgi.co.za]

Use TABLE 4 to answer the questions that follow.

- 3.1.1 Calculate A, the total hectare table grapes produced in the Olifants River region in 2020. (2)
- 3.1.2 Identify the regions with an increase in production of table grapes from 2022 to 2023. (2)
- 3.1.3 State ONE type of graph that can be used to represent the data in TABLE 4. (2)
- 3.1.4 Calculate the median number of hectare production in the Orange River region from 2018 to 2023. (4)
- 3.1.5 Describe the trend in the total production of table grapes in South Africa from 2018 to 2023. (2)

3.2

The table grape industry provides several job opportunities in South Africa.

ANNEXURE B shows the total number of employees per region in South Africa in 2022/2023. Some of the values have been omitted.

Use ANNEXURE B to answer the questions that follow.

3.2.1 The total number of workers in the Orange River region is 34 268.

Show how this total number was calculated. (2)

3.2.2 Name the region with the second highest number of female seasonal workers. (2)

3.2.3 The mean total number of employees is 20 343.

Calculate the value of **Z**, the total number of employees in the Berg River region. Show all calculations. (4)

3.2.4 Determine (rounded to 2 decimal places) the probability of randomly selecting a male seasonal employee from the Orange River or the Hex River region from all the seasonal employees in the five regions. (5)
[25]

QUESTION 4

4.1

Rudi started his own business by selling hamburgers at sporting events in Kimberley.

He rented a mobile kitchen trailer from his father. The rental cost is R180 per day. He also asked his friend Neil, to help him with the preparation of the hamburgers. He pays Neil R250 per day.



ANNEXURE C shows the prices of all the ingredients for the hamburgers from three different stores.

Use ANNEXURE C and the information above to answer the questions that follow.

4.1.1 Calculate the total fixed cost for one day. (2)

4.1.2 Rudi purchased his ingredients for the hamburgers from various stores.

He bought the patties and the butter from Food and More and the cheese from Makro.

The total variable cost to make ONE hamburger is R14,00.

Determine, by showing ALL calculations, from which store he purchased the bread rolls. (7)

4.1.3 Rudi sold the hamburger at R25,00 per hamburger.

Rudi claims that he will make more than 80% profit on one hamburger.

Verify, by showing ALL calculations, if his claim is valid. (5)

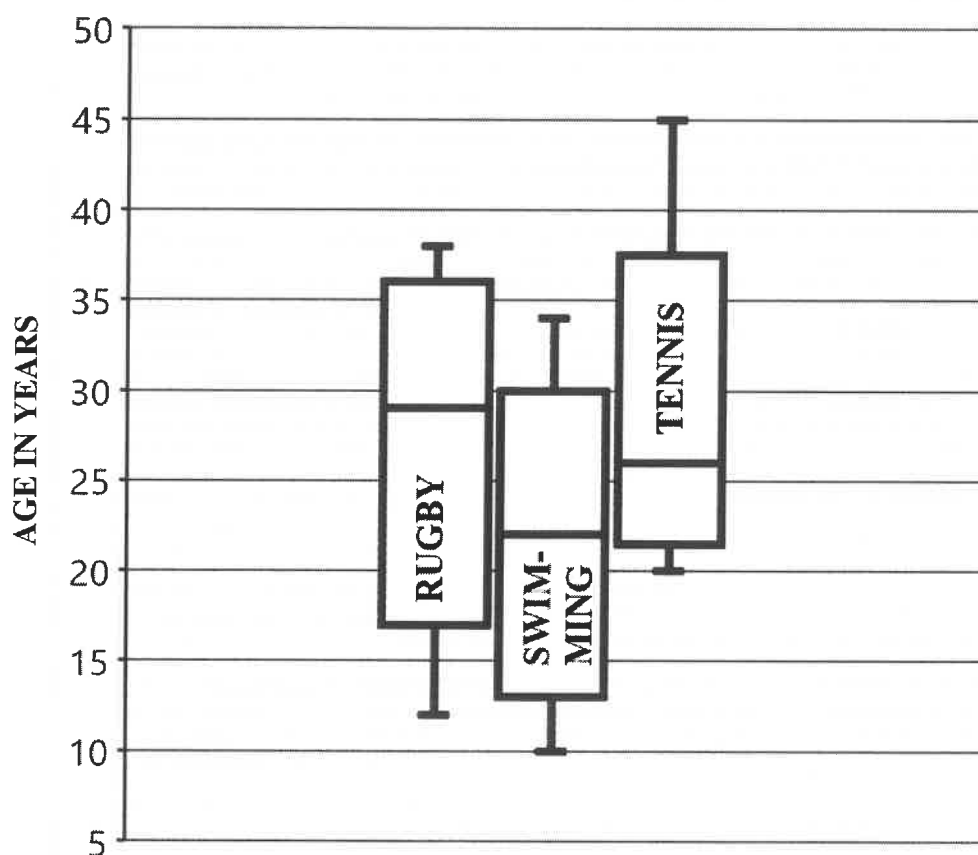
4.2

Rudi used a questionnaire to determine the age of his clients at three different sport events in Kimberley. His findings were summarized in the box and whisker diagram below.

The total number of clients at each sporting event is given below.

Rugby game: **254** Swimming gala: **176** Tennis tournament: **84**

BOX AND WHISKER DIAGRAM OF THE AGE DISTRIBUTION OF RUDI'S CLIENTS AT THE THREE SPORTING EVENTS



[Adapted from www.statskingdom.com]

Use the information above to answer the questions that follow.

4.2.1 Determine the sport event with the oldest client. (2)

4.2.2 Determine the difference in the median age of the clients at the rugby game and the swimming gala. (4)

4.2.3 Calculate the inter quartile range of the age of the clients at the rugby game.

You may use the formula:

$$\text{IQR} = Q3 - Q1 \quad (4)$$

4.2.4 Calculate the number of clients at the tennis tournament aged 37,5 years or older. (3)

4.3

Below is a bank statement of Linda Talmakkies, Rudi's wife, for 19 May 2024 to 19 June 2024.

 DIAMAND BANK LTD. Hopetown Customer Care Centre: 086 032 4600 e-mail: Transact@diamandbank.co.za					
L TALMAKKIES PO BOX 66 HOPETOWN 8750 Statement from 19 May 2024 to 19 June 2024 19 June 2024					
Details	Service Fee	Debits	Credits	Date	Balance
BALANCE BROUGHT FORWARD				19 May	33 804,02-
VOD PREPAID 0845152833		110,00-		22 May	33 914,02-
BOND		6 095,41-		25 May	40 009,43-
AUTO BANK DEPOSIT			1 900,00	27 May	38 109,43-
FIXED MONTHLY FEE	#	195,00-		29 May	38 304,43-
SALARY			B	31 May	5 206,91
IB PAYMENT EDGARS		450,00-		3 Jun	4 756,91
DEBIT CARD PURCHASE: AGAUTO		560,92-		9 Jun	4 195,99
DEBIT CARD PURCHASE: SPAR		2 115,60-		7 Jun	2 080,39
STATEMENT COST	#	38,35-		11 Jun	2 042,04
BALANCE CARRIED FORWARD				19 Jun	2 042,04

Use the information above to answer the questions that follow.

4.3.1 Determine the date on which Linda's bank balance was the lowest. (2)

4.3.2 Determine the salary (**B**) paid into Linda's account on 31 May 2024. (3)

[32]

QUESTION 5

5.1

Mr Nkosi, 47 years old, earned a yearly taxable income of R455 400 for the 2023/24 tax year. During the 2023/24 tax year, Mr Nkosi was a member of a medical aid that covered himself, his wife and two children.

TABLE 5 below shows the tax table, the tax rebates and medical aid credits for the 2023/24 tax year. Some of the values are omitted.

TABLE 5: TAX RATES FOR 2023/24 TAX YEAR

TAX BRACKET	TAXABLE INCOME (R)	RATES OF TAX (R)
1	1 – 237 100	18% of taxable income
2	237 101 – 370 500	42 678 + 26% of taxable income above 237 100
3	370 501 – 512 800	77 362 + 31% of taxable income above 370 500
4	512 801 – 673 000	121 475 + 36% of taxable income above 512 800
5	673 001 – 857 900	179 147 + 39% of taxable income above 673 000
6	A – 1 817 000	251 258 + 41% of taxable income above 857 900
7	1 817 001 and above	644 489 + 45% of taxable income above 1 817 000

TAX REBATES AND MEDICAL AID CREDITS FOR THE 2023/24 TAX YEAR

TAX REBATE	
Primary	R17 235
Secondary (65 and older)	R9 444
Tertiary (75 and older)	R3 124

MEDICAL CREDITS PER MONTH FOR MEDICAL FUND MEMBERS	
Main member	R364
First dependent	R364
Each additional dependent	R246

[Adapted from www.sars.gov.za]

Use TABLE 5 and the information above to answer the questions that follow.

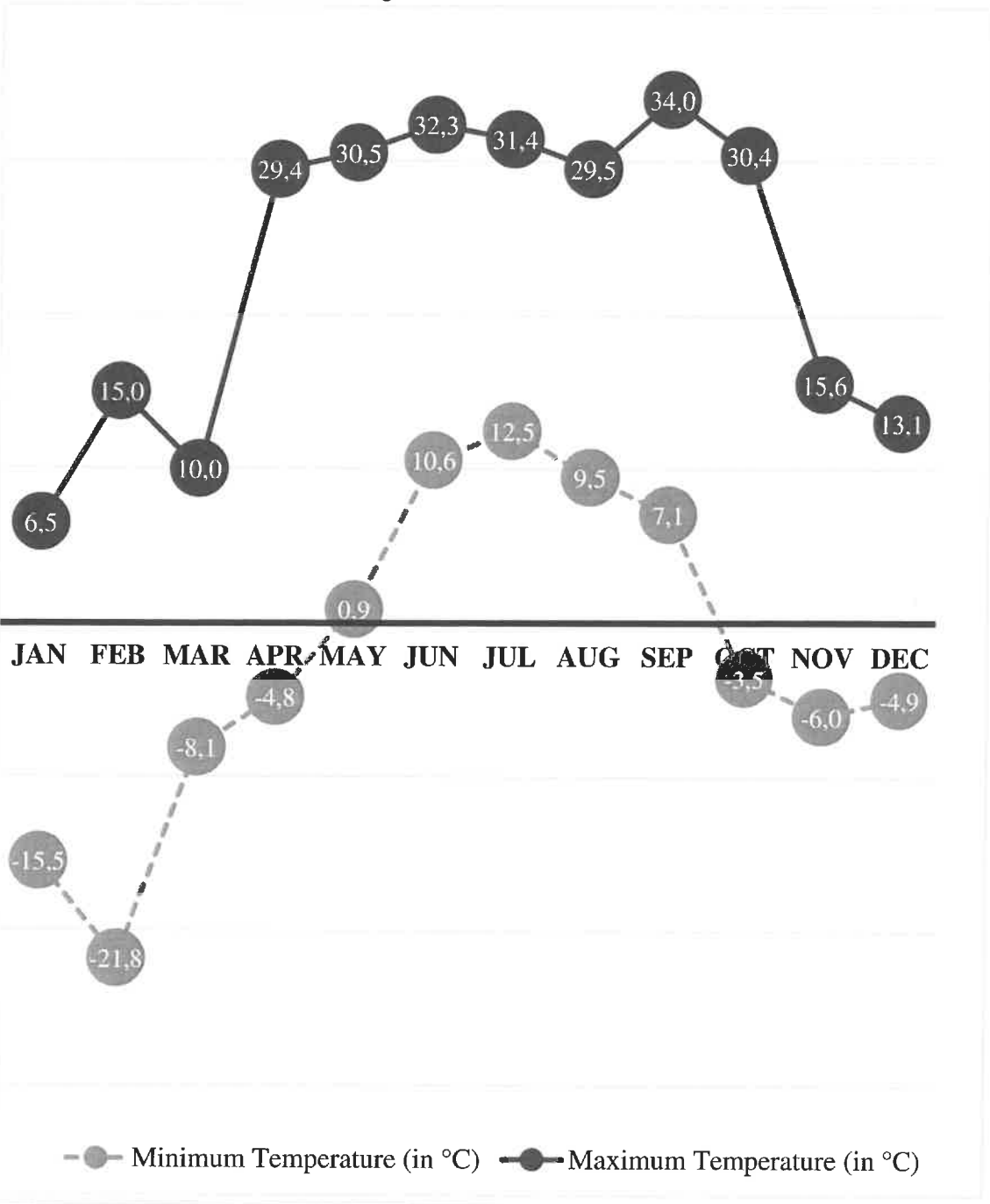
- 5.1.1 Write down the government department responsible for administration of personal income tax. (2)
- 5.1.2 Determine the value of A, the minimum taxable income in tax bracket 6. (2)
- 5.1.3 Calculate Mr Nkosi's annual medical tax credits. (4)
- 5.1.4 Mr Nkosi claims that his monthly tax for the 2023/24 tax year is more than $\frac{1}{6}$ of his monthly taxable income. (8)
- Verify, showing ALL calculations, if this statement is correct.

5.2

Mr Nkosi wants to take his family on a trip to Toronto in Canada.

He searched the internet for information about the temperature in Toronto during different times of the year.

The graph below shows the highest maximum and lowest minimum temperature (in °C) recorded in Toronto during each month in 2023.



[Adapted from www.toronto.weatherstats.ca]

Use the information above to answer the questions that follow.

- 5.2.1 Determine the modal temperature (in °C) in Toronto during 2023. (2)
- 5.2.2 Calculate the range of the minimum temperatures (in °C) in Toronto during 2023. (3)

5.3

Mr Nkosi received a quotation for the holiday accommodation in Toronto in Canada. The cost is CAD 85,45 per person per night. The Nkosi family, consisting of 4 persons, has budgeted ZAR 28 000 for accommodation in Toronto.

TABLE 6 show the exchange rates for four countries.

TABLE 6: EXCHANGE RATES ON 21 FEBRUARY 2024

CURRENCY	UNITS PER ZAR	ZAR PER UNIT
Euro	0,048962	20,424176
Canadian Dollar	0,071526	13,980936
Japanese Yen	7,93508628	Z
British Pound	0,041920	23,854921

CAD: Canadian Dollar

ZAR: South African Rand

[Adapted from www.forbes.com]

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

5.3.1 Identify the currency which is the second strongest against the South African Rand. (2)

5.3.2 Calculate the value of the exchange rate **Z**. (2)

5.3.3 Mr Nkosi claims that their budgeted amount for accommodation is sufficient for 6 nights' stay in Toronto.

Verify, showing ALL calculations, if this statement is correct. (6)

[31]

TOTAL: 150



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**PROVINSIALE VOORBEREIDENDE EKSAMEN/
PROVINCIAL PREPARATORY EXAMINATION**

GRAAD/GRADE 12

**WISKUNDIGE GELETTERDHEID/
MATHEMATICAL LITERACY**

VRAESTEL/PAPER 1

SEPTEMBER 2024

ADDENDUM

**Hierdie addendum bestaan uit 4 bladsye met 3 bylaes./
This addendum consists of 4 pages with 3 annexures.**

ANNEXURE A

QUESTION 2.1

TICKET PRICES FOR THE CABLE CAR AT TABLE MOUNTAIN

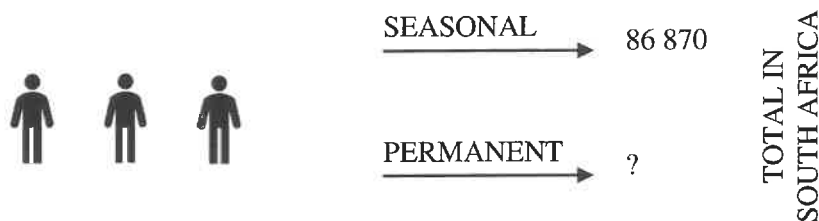
TABLE MOUNTAIN JOURNEY					
Cable Car Ticket Prices					
Ticket Type	Time	1 October 2022 to 30 September 2023		1 October 2023 to 30 September 2024	
		Return	One-Way	Return	One-Way
Morning Adult 18 years and older	08:00 – 13:00	R400	R220	R420	R240
Morning Child 4 – 17 years	08:00 – 13:00	R195	R120	R210	R130
Afternoon Adult 18 years and older	13:00 until closing	R340	R220	R360	R240
Afternoon Child 4 – 17 years	13:00 until closing	R170	R120	R180	R130
SA Senior citizens 60 years and older	Daily	$\frac{1}{4}$ of adult morning return cost	R60	$\frac{1}{4}$ of adult morning return cost	R70
Students	Daily	R230	R130	R250	R150

All prices are 15% VAT inclusive.

[Adapted from www.tablemountain.net/plan-your-visit]

ANNEXURE B

QUESTION 3.2

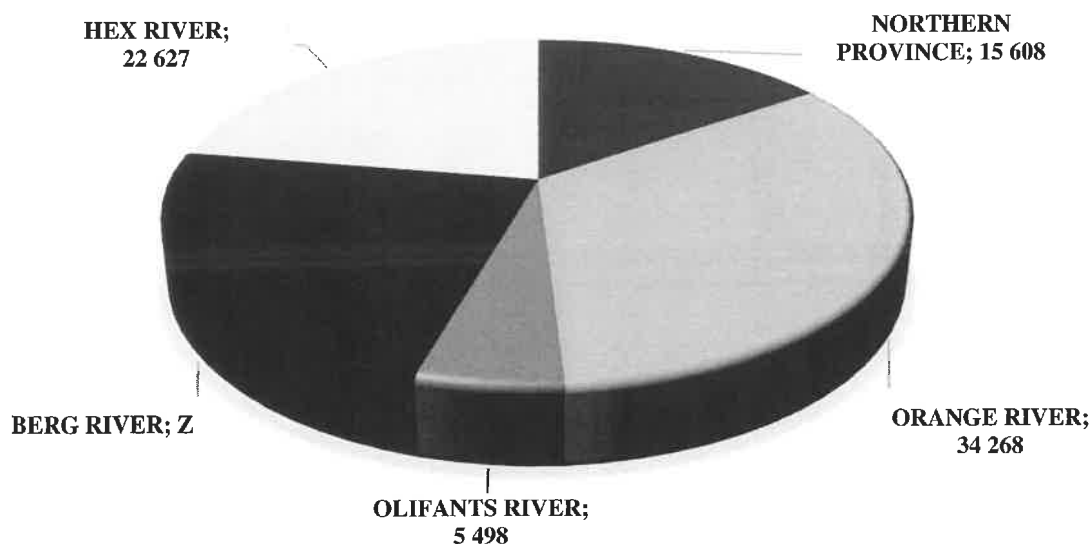
2022/2023 TOTAL NUMBER OF EMPLOYEES IN ALL 5 REGIONS**NUMBER OF WORKERS PER REGION:**

NORTHERN PROVINCE	ORANGE RIVER	OLIFANTS RIVER	BERG RIVER	HEX RIVER
Seasonal: 13 391	Seasonal: 30 590	Seasonal: 4 761	Seasonal: 20 427	Seasonal: 17 701
M 10 043 F 3 348	M 24 472 F 6 118	M 4 142 F 619	M 16 416 F 4 011	M 13 600 F 4 101
Permanent: 2 217	Permanent: 3 678	Permanent: 737	Permanent: ?	Permanent: 4 926
M 2 107 F 110	M 3 457 F 221	M 670 F 67	M ? F ?	M 4 630 F 296
Total: 15 608	Total: 34 268	Total: 5 498	Total: Z	Total: 22 627

Key

M: Male

F: Female

TOTAL EMPLOYMENT PER REGION[Adapted from www.satgi.co.za]

Seasonal workers are employees that are only employed during certain times of the year.

ANNEXURE C

QUESTION 4.1

ITEM	STORES					
	ECONO FOODS		MAKRO		FOOD AND MORE	
	Bulk Price	Units per pack	Bulk Price	Units per pack	Bulk Price	Units per pack
PATTIES 	R114,40	16	R267,20	32	R417,00	60
CHEESE SLICES 	R139,86	54	R135,84	48	R226,80	72
BUTTER 	R57,60	1kg: sufficient for 80 burgers	R68,00	1kg: sufficient for 80 burgers	R48,00	1kg: sufficient for 80 burgers
BREAD ROLLS 	R185,40	5 dozen	R72,89	1½ dozen	R86.88	2 dozen

*All prices include 15% VAT.

[Adapted from www.pricecheck.co.za]



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PROVINSIALE VOORBEREIDENDE EKSAMEN**

GRADE/GRAAD 12

**MATHEMATICAL LITERACY P1/
WISKUNDIGE GELETTERDHEID V1**

SEPTEMBER 2024

MARKING GUIDELINES/NASIENRIGLYNE

MARKS/PUNTE: 150

Symbol/Kode	Explanation/Verduideliking
MA	Method with accuracy/Metode met akkuraatheid
MCA	Method with consistent accuracy/Metode met volgehoue akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/graph/document/diagram/Lees vanaf tabel/grafiek/dokument/diagram
SF	Correct substitution in a formula/Korrekte vervanging in 'n formule
O	Opinion/Explanation/Opinie/Verduideliking
P	Penalty, e.g. for no units, incorrect rounding off, etc./Penalisering, bv. vir geen eenhede, verkeerde afronding, ens.
NPR	No penalty for correct rounding/Geen penalisering vir korrekte afronding nie
NPU	No penalty for omitting unit, but wrong unit is penalised/Geen penaliseringe indien die eenheid uitgelos is nie, maar wel indien 'n verkeerde eenheid gebruik word.
AO	Answer only/Slegs antwoord

**These marking guidelines consist of 19 pages.
Hierdie nasienriglyne bestaan uit 19 bladsye.**

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake one mark is deducted.
- A conclusion mark can only be given if relevant calculations precedes it.
- No penalty for rounding (NPR) if the first decimal is correct.

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas; dit hou egter op by die tweede berekeningsfout.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *Afronding tel as 'n afsonderlike punt.*
- *Die algemene beginsel van merk as 'n leerder een fout maak, word een punt afgetrek.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.*
- *Geen penalisering vir ronding (NPR) as die eerste desimaal korrek is nie.*

QUESTION/VRAAG 1 [29 MARKS/PUNTE]		ANSWER ONLY FULL MARKS	
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	Discount/Afslag $R429,00 - R301,00$ ✓MA $= R128,00$ ✓A	1MA subtracting correct values 1A simplification (2)	F L1
1.1.2	$= 0,3333$ ✓✓A	2A correct decimal NPR (2)	P L1
1.1.3	$= \frac{R179,00}{12}$ ✓MA $= R14,91666667$ ✓A $= R14,92$ ✓R	1MA dividing by 12 1A simplification 1R correct rounding (3)	F L1
1.1.4	$= R0/\text{Free}/\text{Gratis}$ ✓✓A	2A correct delivery cost (2)	F L1
1.1.5	Number of boxes/Aantal bokse $= \frac{27}{12}$ ✓MA $= 2,25$ $= 3 \text{ boxes/bokse}$ ✓A	1MA dividing by 12 1A correct rounded answer (2)	F L1
1.2.1	Twenty-six million fifty-six thousand seven hundred and six/Ses en twintig miljoen ses en vyftig duisend sewehonderd en ses ✓✓A	2A correct number in words (2)	D L1
1.2.2	18 – 24 years/jaar ✓✓A	2A correct age group (2)	D L1
1.2.3	Total percentage/Totale persentasie ✓RT ✓MA $= 3,8\% + 3,6\% + 2,2\% + 1,6\% + 3,0\% + 2,6\%$ ✓A $= 16,8\%$	1RT correct values 1MA adding values 1A simplification (3)	D L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.2.4	Percentage difference/ <i>Persentasie verskil</i> = 14,4% – 1,6% ✓MA = 12,8% ✓A	1MA subtracting correct values 1A simplification (2)	D L1
1.3.1	71,25 million rand ✓RT = R71 250 000 ✓A	1RT correct value from table 1A in numerals (2)	F L1
1.3.2 *	Value of A/ <i>Waarde van A</i> $= \frac{35,5}{100} \times 54$ ✓MA = 19,17 ✓A	1MA calculating 35,5% of 54 1A simplification (2)	F L1
1.3.3	✓RT 90 : 150 ✓MA 3 : 5 ✓CA OR/OF ✓RT 90 000 000 : 150 000 000 ✓MA 3 : 5 ✓CA	1RT correct values 1MA correct order 1CA simplification 1RT correct values 1MA correct order 1CA simplification (3)	F L1
1.3.4	4 ✓✓RT	1RT correct number of suburbs (2)	F L1
		[29]	

QUESTION/VRAAG 2 [33 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.1	6 people/mense ✓✓A	2A correct number (2)	F L1
2.1.2	$\text{Percentage increase} = \frac{\overset{\checkmark\text{MA}}{R250 - R230} \times \overset{\checkmark\text{MA}}{100\%}}{\underset{\checkmark\text{A}}{R230}}$ $= 8,695652174\%$ $= 9\% \checkmark\text{CA}$	1MA subtracting correct values 1A denominator 1MA calculating percentage 1CA simplification with correct rounding (4)	F L2
2.1.3 *	Return cost for senior citizens/ <i>Retoerkoste vir senior burgers</i> $= \left(\frac{1}{4} \times R420\right) \checkmark\text{MA}$ $= R105 \checkmark\text{A}$ Total cost after 13:00 / <i>Totale koste na 13:00</i> $= (2 \times R360) + (3 \times R130) + R105$ $= R720 + R390 + R105 \checkmark\text{MCA}$ $= R1\,215 \checkmark\text{CA}$ Amount saved/ <i>Besparing</i> $= R1\,365 - R1\,215 \checkmark\text{MCA}$ $= R150 \checkmark\text{CA}$	1MA calculate ¼ of R420 1A return cost senior citizen 1MA calculate afternoon adult return cost 1MA calculate one-way children afternoon MCA adding all cost 1CA total cost after 13:00 1MCA calculate the difference 1CA amount saved (8)	F L3
2.1.4	They do not earn an income/ <i>Hulle verdien nie 'n inkomste nie.</i> ✓✓O OR/OF Students received student discount/ <i>Studente ontvang student afslag.</i> ✓✓O OR/OF Students are more likely to support businesses that offer discount/ <i>Studente is meer geneig om besighede te ondersteun wat afslag bied.</i> ✓✓O	2O valid reason 2O valid reason 2O valid reason (2)	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.2.1	✓✓A You buy the solar panels at a monthly installment. Only after your final installment you own the solar panels./ <i>Jy koop die sonpaneel teen 'n maandelikse paaïement. Eers ná jou finale paaïement word die sonpaneel jou eiendom.</i>	2A explanation (2)	F L1
2.2.2	Amount excluding VAT/Bedrag BTW uitgesluit $= \frac{R224\,660}{1,15} \quad \checkmark\text{MA}$ $= R195\,356,52$ Vat Amount/BTW bedrag $= R224\,660 - R195\,356,52 \quad \checkmark\text{MCA}$ $= R29\,303,48 \quad \checkmark\text{CA}$ OR/OF $= \frac{R224\,660}{115} \times 15 \quad \checkmark\text{MCA}$ $= R29\,303,48 \quad \checkmark\text{CA}$	1MA dividing by 1,15 1MCA subtracting values 1CA simplification 1MA dividing by 115 1MCA multiply by 15 1CA simplification (3)	F L2
2.2.3	Total cost/Totale koste $= R26\,960 + (R5\,400 \times 60) + (R105 \times 60)$ $= R26\,960 + R324\,000 + R6\,300 \quad \checkmark\text{MCA}$ $= R357\,260 \quad \checkmark\text{CA}$	1MA calculating total instalment 1MA calculating total admin fees 1CA simplification instalment 1CA simplification admin fee 1MCA adding all values 1CA simplification (6)	F L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.2.4	Division of monthly installment/ <i>Verdeling van maandelikse paaieiment</i> $5 + 3 = 8$ ✓A Mr Johnson = $\frac{5}{8} \times R5400$ ✓MA = R3 375 ✓CA Mrs Johnson = $\frac{3}{8} \times R5400$ = R2 025 ✓MCA Difference/<i>Verskil</i> = R3 375 – R2 025 = R1 350 ✓MCA His claim is VALID/Sy bewering is <i>GELDIG</i> ✓O OR/OF Division of monthly installment/ <i>Verdeling van maandelikse paaieiment</i> $5 + 3 = 8$ ✓A $\frac{5}{8} - \frac{3}{8}$ ✓MA = $\frac{2}{8}$ ✓CA Difference/<i>Verskil</i> = $\frac{2}{8} \times R5400$ ✓MCA = R1 350 ✓MCA His claim is VALID/Sy bewering is <i>GELDIG</i> ✓O	1A correct total 1MA calculating portion 1CA simplification 1MCA correct portion 1MCA difference 1O conclusion 1A correct total 1MA subtracting the two fractions 1CA simplification 1MCA multiply by R5 400 1MCA difference 1O conclusion	F L4 (6) [33]

QUESTION/VRAAG 3 [25 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.1	$A = 21\,100 - (2\,522 + 5\,857 + 4\,934 + 6\,563)$ ✓MA $A = 21\,100 - 19\,876$ $A = 1\,224$ ✓A	1MA adding correct values and deduct from total 1A simplification (2)	D L1
3.1.2	Orange River/Oranje Rivier ✓RT Berg River/Berg Rivier ✓RT	1RT region 1RT region (2)	D L1
3.1.3	Compound Bar Graph/Saamgestelde staafgrafiek ✓✓A OR/OF Line Graph/Lyngrafiek ✓✓A OR/OF Multiple Bar Graph/Meervoudige staafgrafiek ✓✓A	2A graph 2A graph 2A graph (2)	D L1
3.1.4 *	Median/Mediaan 5 626; 5 768; 5 778; 5 857; 6 147; 6 195 ✓A $= \frac{5\,778 + 5\,857}{2}$ ✓MA $= \frac{11\,635}{2}$ $= 5\,817,5$ ✓CA	1A arranging all the correct values 1A finding middle values 1MA concept of median 1CA simplification (4)	D L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.1.5 *	Trend from 2018 to 2023/<i>Tendens vanaf 2018 tot 2023</i> ✓O From 2018 to 2019, there was an <u>increase</u> in production/ <i>Vanaf 2018 tot 2019 was daar 'n toename in produksie</i> ✓O From 2019 to 2023, production <u>decreased</u>/reduction annually/ <i>Vanaf 2019 tot 2023 het die produksie jaarliks afgeneem/vermindering</i>	1O increase from 2018 to 2019 1O decrease from 2019 to 2023 (2)	D L4
3.2.1	✓RT 30590 + 3 678 ✓MA = 34 268 OR/OF ✓RT 24 472 + 6 118 + 3 457 + 221 ✓MA = 34 268	1 RT correct values 1MA adding correct values 1 RT correct values 1MA adding correct values (2)	D L2
3.2.2	Hex River/<i>Hex Rivier</i> ✓✓RT	2RT region (2)	D L1
3.2.3	✓MA ✓MA 20 343 × 5 = 15 608 + 34 268 + 5 498 + 22 627 + Z 101 715 = 78 001 + Z Z = 101 715 – 78 001 ✓MCA Z = 23 714 ✓CA OR/OF Value of Z/<i>Waarde van Z</i> ✓MA $20343 = \frac{15608 + 34268 + 5498 + Z + 22627}{5}$ ✓MA $20343 = \frac{78001 + Z}{5}$ Z = (20 343 × 5) - 78 001 ✓MCA Z = 23 714 ✓CA	1 MA concept of mean 1MA adding values 1MCA changing the subject of the formula 1CA simplification 1 MA concept of mean 1MA adding values 1MCA changing the subject of the formula 1CA simplification (4)	D L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.2.4 *	Probability/Waarskynlikheid $= \frac{24472 + 13600}{86870}$ = 0,4382640728 = 0,44 OR/OF $= \frac{24472}{86870} + \frac{13600}{86870}$ = 0,2817082998 + 0,156555773 = 0,4382640728 = 0,44	1RT correct values 1MA adding correct values 1A denominator 1CA simplification 1R rounding to 2 decimals 1RT correct values 1A denominator 1MA adding decimals 1CA simplification 1R rounding to 2 decimals (5)	P L3
		[25]	

QUESTION/VRAAG 4 [32 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.1.1	Fixed Cost/Vaste Koste $= R180 + R250$ ✓MA $= R430$ ✓A	1MA adding correct values 1A simplification (2)	F L1
4.1.2	Unit cost of patties/Eenheidskoste van patties $= R417 \div 60$ ✓MA $= R6,95$ ✓A Unit cost of butter/Eenheidskoste van botter $= R48 \div 80$ $= R0,60$ ✓A Unit cost of cheese/Eenheidskoste van kaas $= R135,84 \div 48$ $= R2,83$ ✓A Unit cost of bread roll/Eenheidskoste van broodrolletjie ✓MCA $R14 - R6,95 - R0,60 - R2,83$ $= R3,62$ Unit price of bread roll at different stores /Eenheidskoste van broodrolletjie by verskillende winkels Econo Foods $= R185,40 \div 60$ $= R3,09$ Makro $= R72,89 \div 18$ $= R4,05$ Food and More $= R86,88 \div 24$ ✓MCA $= R3,62$ FOOD AND MORE ✓A OR/OF	1MA dividing by 60 1A patties unit cost 1A butter unit cost 1A cheese unit cost 1MCA subtracting the unit costs from R14 1MCA Calculating the unit cost 1A correct store	F L3

Unit cost of patties/<i>Eenheidskoste van patties</i> $= R417 \div 60$ ✓MA $= R6,95$ ✓A Unit cost of butter/<i>Eenheidskoste van botter</i> $= R48 \div 80$ $= R0,60$ ✓A Unit cost of cheese/<i>Eenheidskoste van kaas</i> $= R135,84 \div 48$ $= R2,83$ ✓A Unit cost of bread roll/<i>Eenheidskoste van broodrolletjie</i> ✓MCA $R14 - R6,95 - R0,60 - R2,83$ $= R3,62$ Bulk price bread rolls/<i>Grootmaat prys broodrolletjies</i> ✓MCA $= R3,62 \times 24$ $= R86,88$ FOOD AND MORE ✓A	1MA dividing by 60 1A patties unit cost 1A butter unit cost 1A cheese unit cost 1MCA subtracting the unit costs from R14 1MCA multiply by the units per pack 1A correct store (7)
--	--

4.1.3	Profit/Wins $R25 - R14$ ✓MA $= R11$ ✓A $= \frac{11}{14} \times 100\%$ ✓MCA $= 78,57\%$ ✓CA Rudi's claim is invalid/<i>Rudi se bewering is verkeerd</i> ✓O OR/OF Profit/Wins $= R14 \times \frac{80}{100}$ ✓MA $= R11,20$ ✓A Selling price /<i>Verkoopsprys</i> $= R14 + R11,20$ ✓MCA $= R25,20$ ✓CA $R25,20 > R25$ Rudi's claim is invalid/<i>Rudi se bewering is verkeerd</i> ✓O	1MA subtracting correct values 1A simplification 1MCA percentage calculation 1CA simplification 1O conclusion NPR 1MA percentage calculation 1A simplification 1MCA adding correct values 1CA simplification 1O conclusion (5)	F L4
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Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.2.1	Tennis ✓✓RT	2RT sport event (2)	D L1
4.2.2	Median age/Mediaan ouderdom Difference/Verskil ✓RT ✓RT = 29 – 22 ✓MA = 7 ✓CA	1RT median age rugby 1RT median age swimming 1MA subtracting values 1CA simplification (4)	D L2
4.2.3 *	Inter Quartile Range/Interkwartielomvang = Q3 – Q1 ✓RT ✓RT = 36 – 17 ✓MA = 19 ✓CA	1RT quartile 3 1RT quartile 1 1MA subtracting values 1CA simplification (4)	D L3
4.2.4	✓MA $\frac{25}{100} \times \frac{84}{1}$ ✓RT = 21 ✓A OR/OF $\frac{75}{100} \times 84$ ✓RT = 63 84 – 63 ✓MA = 21 ✓A	1MA calculating 25% 1RT finding 84 1A simplification 1RT finding 84 1MA subtracting correct values 1A simplification (3)	D L3
4.3.1	25 May/25 Mei ✓✓RT	2RT date (2)	F L1
4.3.2	Salary B/Salaris B ✓RT = R5 206,91 – (-R38 304,43) = R5 206,91 + R38 304,43 ✓MA = R43 511,34 ✓A	1RT correct values 1MA adding values 1A simplification (3)	F L2
		[32]	

QUESTION/VRAAG 5 [31 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.1.1	SARS/SAID ✓✓A OR/OF South African Revenue Service/ Suid-Afrikaanse Inkomstediens ✓✓A	2A government department 2A government department (2)	F L1
5.1.2	A = 857 901 ✓✓A	2A value of A (2)	F L2
5.1.3	Medical tax credits/Mediese belasting krediete ✓MA ✓MA (R364 × 2) + (R246 × 2) = R728 + R492 = R1 220 × 12 ✓MCA = R14 640 ✓CA	1MA main member and first dependant 1MA two additional dependants 1MCA multiply by 12 1CA simplification (4)	F L2
5.1.4 *	Monthly tax/Maandelikse belasting = R77 362 + $\frac{31}{100} \times (R455\,400 - R370\,500)$ ✓SF = R77 362 + $\frac{31}{100} \times (R84\,900)$ ✓CA = R77 362 + R26 319 = R103 681 – R17 235 – R14 640 ✓MA ✓MCA = R71 806 ÷ 12 = R5 983,83 ✓MCA 1/6 of monthly taxable income/ 1/6 van maandelikse belasbare inkomste = R455 400 ÷ 12 ✓MA = R37 950 × $\frac{1}{6}$ = R6 325 ✓MCA His claim is not valid/Sy bewering is nie geldig nie ✓O	CA From Question 5.1.3 1SF substitution in correct bracket 1CA simplification 1MA subtracting rebate 1MCA subtracting medical credits 1MCA dividing by 12 and simplification 1MA dividing by 12 1MCA multiply by 1/6 and simplification 1O conclusion (8)	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	
5.2.1 *	No mode/ <i>Geen modus</i> OR/OF None/ <i>Geen</i> ✓✓A	2A no mode (2)	D L2
5.2.2 *	Range/ <i>Omvang</i> ✓RT ✓RT 12,5 °C – (-21,8 °C) = 34,3 °C ✓CA	1RT correct value 1RT correct value 1CA simplification NPU (3)	D L2
5.3.1	Euro ✓✓RT	2RT currency (2)	F L1
5.3.2	$Z = \frac{1}{7.93508628}$ ✓MA Z = 0,1260225743 ✓A	1MA dividing by exchange rate 1A simplification NPR (minimum of 6 decimals) (2)	F L2
5.3.3	Total accommodation cost/ <i>Totale akkomodasie koste</i> ✓RT = CAD 85,45 × 4 × 6 ✓MA = CAD 2 050,80 ✓CA = $\frac{\text{CAD } 2050,80}{1} \times 13,980936$ ✓MCA = R28 672,10 ✓CA His claim is not valid/ <i>Sy bewering is nie geldig nie</i> ✓O OR/OF Total accommodation cost/ <i>Totale akkomodasie koste</i> ✓RT = CAD 85,45 × 4 × 6 ✓MA = CAD 2 050,80 ✓CA = $\frac{\text{CAD } 2050,80}{0,071526} \times 1$ ✓MCA = R28 672,09 ✓CA His claim is not valid/ <i>Sy bewering is nie geldig nie</i> ✓O OR/OF	1RT CAD 85,45 1MA multiply by 4 and 6 1CA simplification 1MCA multiply with exchange rate 1CA simplification 1O conclusion 1RT CAD 85,45 1MA multiply by 4 and 6 1CA simplification 1MCA dividing by exchange rate 1CA simplification 1O conclusion	F L4

	Total accommodation cost/<i>Totale akkomodasie koste</i> ✓RT = CAD 85,45 × 4 × 6 ✓MA = CAD 2 050,80 ✓CA ZAR 28 000 13,980936 ✓MCA = CAD 2002,73 ✓CA His claim is not valid/<i>Sy bewering is nie geldig</i> ✓O OR/OF Total accommodation cost/<i>Totale akkomodasie koste</i> ✓RT = CAD 85,45 × 4 × 6 ✓MA = CAD 2 050,80 ✓CA ZAR 28 000 × 0,071526 ✓MCA = CAD 2002,73 ✓CA His claim is not valid/<i>Sy bewering is nie geldig</i> ✓O	1RT CAD 85,45 1MA multiply by 4 and 6 1CA simplification 1MCA dividing by exchange rate 1CA simplification 1O conclusion 1RT CAD 85,45 1MA multiply by 4 and 6 1CA simplification 1MCA multiply with exchange rate 1CA simplification 1O conclusion (6)	
		[31]	
	TOTAL/TOTAAL: 150		

NOTES		
QUESTION 1		
1.3.2	$= \frac{35,5}{100} \times 54 \quad \checkmark \text{MA}$ $19\,170\,000$	1 / 2 marks
QUESTION 2		
2.1.3	Return cost for senior citizens/<i>Retoerkoste vir senior burgers</i> $= \left(\frac{1}{4} \times R420\right) \quad \checkmark \text{MA}$ $= R105 \quad \checkmark \text{A}$ Total cost after 13:00 / <i>Totale koste na 13:00</i> $\checkmark \text{MA} \quad \checkmark \text{MA}$ $= (2 \times R360) + (3 \times R130) + R105$ $= R720 + R390 + R105 \quad \checkmark \text{MCA}$ $= R1\,215 \quad \checkmark \text{CA}$ Amount saved/<i>Besparing</i> $= R1\,335 - R1\,215 \quad \checkmark \text{MCA}$ $= R120 \quad \checkmark \text{CA}$	8 / 8 marks
QUESTION 3		
3.1.4	Correct dataset used and one value omitted	2 / 4 marks
	Wrong dataset used	3 / 4 marks
3.1.5	Decreased	1 / 2 marks
	Decreased from 2019 to 2023	2 / 2 marks
3.2.4	Probability/<i>Waarskynlikheid</i> $\checkmark \text{RT} \quad \checkmark \text{MA}$ $= \frac{24\,472 + 13\,600}{86\,870} \quad \checkmark \text{A}$ $= \frac{38\,072}{86\,870}$ $\checkmark \text{CA}$ $= 0,4382640728 \times 100$ $= 43,82640728 \%$ $= 43,83 \% \quad \checkmark \text{R}$	5 / 5 marks

QUESTION 4		
4.2.3	Other sport	2 / 4 marks
QUESTION 5		
5.1.4	Monthly tax/<i>Maandelikse belasting</i> $= R77\,362 + \frac{31}{100} \times (R455\,400 - R370\,500) \quad \checkmark \text{SF}$ $= R77\,362 + \frac{31}{100} \times (R84\,900) \quad \checkmark \text{CA}$ $= R77\,362 + R26\,319$ $= R103\,681 - R17\,235 - R14\,640 \quad \checkmark \text{MA} \quad \checkmark \text{MCA}$ $= R71\,806 \div 12$ $= R5\,983,83 \quad \checkmark \text{MCA}$ Monthly taxable income/ <i>Maandelikse belasbare inkomste</i> $= R455\,400 \div 12 \quad \checkmark \text{MA}$ $= R37\,950$ $\frac{R5\,983,83}{R37\,950} \quad \checkmark \text{MCA}$ $= 0,15768$ $\frac{1}{6}$ $= 0,16667$ His claim is not valid/<i>Sy bewering is nie geldig nie</i> $\checkmark \text{O}$	8 / 8 marks
5.2.1	0	0 / 2 marks
5.2.2	-21,5 - 12,5 $= -34,3$	2 / 3 marks



education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2024

MARKS: 150

TIME: 3 hours

This question paper consists of 11 pages and an addendum with 5 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:

ANNEXURE A for QUESTION 1.2
ANNEXURE B for QUESTION 2.1
ANNEXURE C for QUESTION 3
ANNEXURE D for QUESTION 4.1
ANNEXURE E for QUESTION 5.2
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 calculations clearly.
7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

- 1.1 Camino de Santiago (pilgrimage) is an ancient pilgrimage trail originating in the medieval times. Made up of a vast network of roads and paths, pilgrims travel (walk) to arrive at the cathedral of Santiago de Compostela. The Camino was and still is Europe's oldest, busiest, and most well-known route.

Gordon and Jane did the Camino pilgrimage from St Jean Pied de Port in France to Santiago de Compostela in Spain. They walked a total distance of 800 km. They walked for 34 days consecutively. Every evening they slept at different villages. Gordon used his Garmin watch to keep track of their every day's progress.

Below is an extract of the last 6 days (from Tricastela to Compostela de Santiago) of their route's information.

TABLE 1: PROGRESS OF GORDON AND JANE'S LAST 6 DAYS

DAY	Steps	Activity time	Distance in km	Calories
Day 29	31 153	5:53:39	25,21	2 194
Day 30	28 732	5:19:34	22,80	2 228
Day 31	32 697	5:56:53	25,46	2 293
Day 32	36 629	6:53:46	29,47	3 280
Day 33	25 414	4:44:12	20,28	2 084
Day 34	27 932	4:49:37	20,90	2 765
Total	A	33:37:41	144,12	14 844

[Adapted from Camino de Santiago 2023/2024 Facebook]

Use TABLE 1 above to answer the questions that follow.

- 1.1.1 Calculate the total number of steps (**A**) they had for the last six days. (2)
- 1.1.2 Determine the difference in calories between day 32 and day 29. (2)
- 1.1.3 Write down the second longest activity time they spent walking. (2)
- 1.1.4 Arrange the distance in kilometers from day 29 to day 34 in descending order. (2)
- 1.1.5 Write the calories of day 33 and day 32 as a ratio in its simplest form. (3)
- 1.1.6 Calculate the kilometers of day 32 as a percentage of the total number of kilometers they walked in the last 6 days. (3)

- 1.2 Agnetia is planning to move to Johannesburg. She studies the electricity tables to decide which paying option to use. ANNEXURE A presents the table on the Residential Prepaid option as well as a Residential Conventional option.

Use ANNEXURE A and the information above to answer the questions that follow.

- 1.2.1 Write down the assumed monthly kilowatt usage for both Prepaid and Conventional. (2)
- 1.2.2 Name the TWO extra charges included in the Residential Conventional that is not in the Prepaid method. (2)
- 1.2.3 Convert the tariff for 500 kilowatts of the Residential Prepaid system to rand. (2)
- 1.2.4 Determine the difference between the average selling price (c/kWh) for Residential Prepaid and Residential Conventional VAT included. (3)
- 1.2.5 Show how the value of block 2 (VAT Excl.) for R313,79 on the Residential Prepaid system was calculated. (3)
- [26]**

QUESTION 2

- 2.1 Amancio Gonzalez, a motivational speaker provides schools with motivational books for learners that improved the most during the year. The list of Amancio's Top 9 Motivational books are displayed in ANNEXURE B.
- The books marked with a hashtag (#) was on sale.
- All prices include 15% VAT.
- The authors gave a further 7,25% sales discount if more than 200 books per author were bought.

Use ANNEXURE B and the information above to answer the questions that follow.

- 2.1.1 Write down the name of the book that was written by Robin Sharma. (2)
- 2.1.2 Determine the percentage discount if, *The 7 Habits for Highly Effective People* were sold for R249 each. (4)
- 2.1.3 Calma bought 5 copies of the cheapest books displayed as well as 7 copies of the second most expensive books. Calculate the total cost for the twelve books VAT excluded. (6)
- 2.1.4 School A requested 225 copies of *Tuesdays with Morrie* to use as a prescribed book. The school has a budget of R41 150 to purchase the books.
- The English teacher stated that they will NOT have enough in the budget to purchase the 225 books.
- Verify showing ALL calculations, whether the statement of the teacher is CORRECT. (6)
- 2.1.5 Determine the probability that a book cost less than R280. Write your answer as a decimal number rounded to two decimal places. (3)

- 2.2 Three pen pals from different countries decided to do the Camino from Portugal to Santiago de Compostela. Dario is from Japan; Catalina originally from Spain (but lives in the UK) and Jan is from South Africa.

Dario decided to take ¥ 246 900, Catalina took £1 400 and Jan took R32 750 to use as spending money.

TABLE 3: CURRENCIES ON 6 SEPTEMBER 2023

1€	R20,5669	€ - Euro
1€	£0,85304601	£ - British Pound
R1	¥7,6764314	¥ - Japanese Yen
1€	¥157,86242	R - ZAR

[Adapted from <https://xecurrencyconverter/>]

Use TABLE 3 above to answer the questions that follow.

- 2.2.1 Name TWO factors that influences the exchange rate of a country. (2)
- 2.2.2 Convert 1 Japanese Yen (¥) to Euro (€). (2)
- 2.2.3 Dario will be using $\frac{3}{7}$ of his spending money for accommodation. Determine the amount he will have left for food and spending money in Yen. (4)
- 2.2.4 Calculate how many euros each of the friends will receive for the amount they decided to take with as spending money and write down the name of the person who will have the most euros. (7)

[36]

QUESTION 3

- 3 A survey was made on the number of Pilgrims that completed the Camino de Santiago in the years 2019 to 2022. The survey is displayed on ANNEXURE C.

Use the ANNEXURE C and the information above to answer the questions that follow.

- 3.1 Write the total number of all the Pilgrims from 2019 to 2022 in words. (2)
- 3.2 Explain the term *survey*. (2)
- 3.3 Write down the number of Pilgrims that completed the Camino de Santiago in September 2019. (2)
- 3.4 Calculate the value of **A**, Pilgrims who walked the Camino in August 2020. (3)
- 3.5 The range of the monthly total number of Pilgrims that took part in the Camino de Santiago from 2019 to 2022 was 206 716.
- Use the concept of range to determine the lowest total value of the Pilgrims from 2019 to 2022 (value **B**). (3)
- 3.6 Calculate the mean number of Pilgrims that completed the Camino de Santiago in the year 2021. (3)
- 3.7 Alexander one of the Pilgrims stated that there was 10% more Pilgrims that completed the Camino de Santiago in 2022 than in 2019 out of the total number of Pilgrims that completed from 2019 to 2022.
- Verify, showing ALL calculations, whether the statement is CORRECT. (8)
- 3.8 Determine the probability that more than 50 000 Pilgrims completed the Camino de Santiago per month in the year 2022.
- Write your answer as a percentage rounded to the nearest whole number. (3)
- [26]**

QUESTION 4

- 4.1 Mr Alejandro teaches Spanish to three groups of students. At the end of the year, he displays the results in box and whisker diagrams to compare the results. He analyses the results and then finds alternative methods to increase the results. Study the display of his results for 2023 on ANNEXURE D.

Use ANNEXURE D to answer the questions that follow.

- 4.1.1 State what percentage the box represents in the box and whisker diagram. (2)
- 4.1.2 Write down the outlier as well as the class in which it occurred. (3)
- 4.1.3 Which values are used to draw the box and whisker diagram? (2)
- 4.1.4 Alejandro states that Class B's IQR is 7,5% more than the IQR of Class A and C combined.
- Verify, showing ALL calculations, whether his statement is CORRECT. (8)
- 4.1.5 Use the measures of central tendency or spread to determine which class performed the best.
- State the measure of central tendency or spread and give a reason for your answer. (4)

- 4.2 Morne has a business on the side where he makes charcuterie boards out of special wood. He purchases sheets of the special wood and cut them to size and finishes the wood off with a special oil. He sells these charcuterie boards at different markets across the country for R450 each.



TABLE 5: INCOME AND EXPENSES OF MORNE'S CHARCUTERIE BOARDS BUSINESS

Number of charcuterie boards	0	5	15	25	50	85
Income (Rand)	0	2 250	A	11 250	22 500	38 250
Expenses (Rand)	2500	3 375	5 125	B	11 250	17 375

*Charcuterie board: A cutting board made of wood (also known as a chopping board).

Use TABLE 5 and information above to answer the questions that follow.

- 4.2.1 Determine the cost of ONE charcuterie board. (3)
- 4.2.2 Calculate the values for **A** and **B**. (4)
- 4.2.3 Write a formula to determine the expense (Rand) for the charcuterie boards. (2)
- 4.2.4 Determine how many charcuterie boards needs to be sold before Morne shows a profit. Show ALL calculations. (5)
- 4.2.5 Name TWO possible factors that influence fixed cost in this context. (2)

[35]

QUESTION 5**5.1 SOLAR PANEL TAX INCENTIVE FOR INDIVIDUALS**

The Government proposes a program which can supplement electricity supply. Individuals will be able to claim a rebate value of 25% of the cost of a new and unused solar photovoltaic(PV) panel, up to a maximum of R15 000 per individual. The rebate applies to qualifying solar PV panels that are bought into use for the first time in the period from 1 March 2023 to 29 February 2024.

Voltech
SOLAR
neatly quickly honestly

Solar installation
5KVA Solar Kit

- 1 x Luxpower 5Kw Hybrid Inverter
- 1 x Dyness wall mount 4.8Kwh Lithium-ion Battery
- 6 x 455watt Solar Panels with Aluminum Structure Kit
- Complete DB Split on AC Side (Mechanical Barrier)
- Protection for complete installation
- PV Combiner Box
- Battery Disconnecter 125Amp
- Cables, Trunking and Consumables for complete installation

R85 000
Price include all material, installation and COC Certificate

Special offer

[Adapted from: 2023 budget faqs- solar panel tax incentive]

Study the information and advertisement above and answer the questions that follow.

- 5.1.1 Write down the number of panels as well as the power of the panels shown in this special offer. (2)
- 5.1.2 During what period will a person qualify for this special rebate option? (2)
- 5.1.3 Tom plans to purchase the special offer. Determine the rebate amount that Tom can qualify for if a single panel costs R4 000. (4)
- 5.1.4 Tom does not have the cash amount of R85 000 and applied for a loan at Bank A. He can get the loan at 12,5% interest over a two-year period compounded yearly. (6)
- Calculate Toms monthly repayment amount.

- 5.2 Dante Salvador is 71 years of age. He is registered with SARS and pays his annual tax promptly. He is married and lives with his wife.

He still contributes towards a medical aid, which covers him and his wife.

ANNEXURE E represents the tax tables for the year 2023/2024.

Use ANNEXURE E and the information above to answer the questions that follow.

- 5.2.1 Determine Dante's annual medical tax credit amount. (3)

- 5.2.2 Calculate the tax rebate amount that will be deducted from Dante's annual tax. (3)

- 5.2.3 TABLE 6 on ANNEXURE E show the tax table and rebates for the year 2023/2024.

Dante receives a taxable income of R35 750 per month.

Calculate the monthly amount that Dante will contribute towards tax. (7)
[27]

TOTAL: 150



education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

ADDENDUM

SEPTEMBER 2024

MARKS: 150

This addendum consists of 6 pages with 5 annexures.

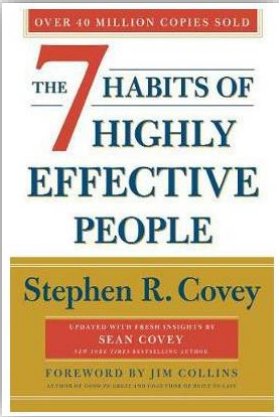
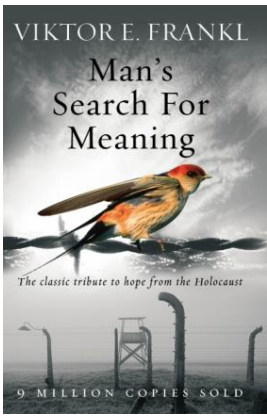
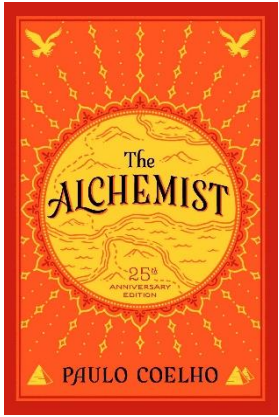
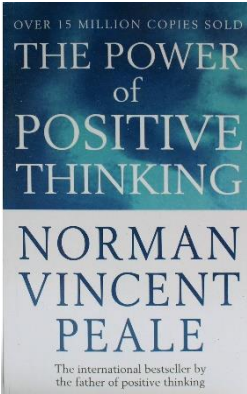
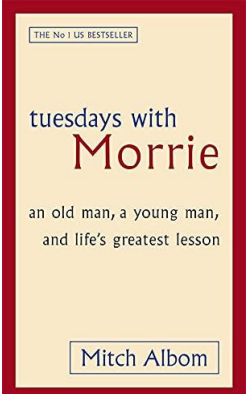
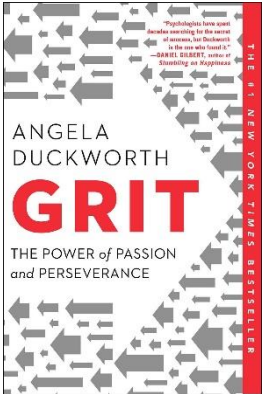
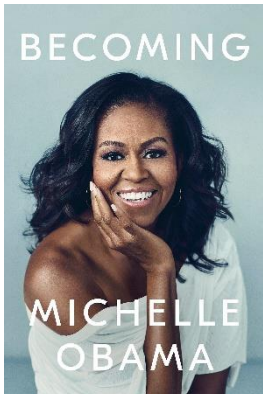
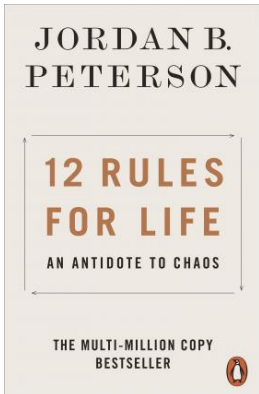
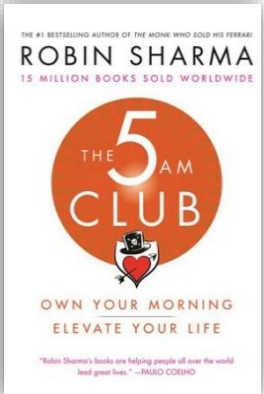
ANNEXURE A**QUESTION 1.2****TABLE 2: RESIDENTIAL PREPAID AND RESIDENTIAL CONVENTIONAL ELECTRICITY TARIFFS**

Residential Prepaid 2022/23				
Assumed Monthly Usage			700	
	Size	Tariff (c/kWh)	Rand (VAT Excl.)	Rand (VAT Inc.)
Block 1	350	182,37	R638,29	R734,04
Block 2	500	209,19	R313,79	R360,85
Block 3	>500	238,36	R476,73	R548,24
Sub-total			R1 428,80	R1 643,12
Basic charge			R0,00	R0,00
Total charge for the month			R1 428,80	R1 643,12
Average selling price (c/kWh)			204,11	234,73

Residential Conventional 2022/23				
Assumed Monthly Usage			700	
	Size	Tariff (c/kWh)	Rand (VAT Excl.)	Rand (VAT Inc.)
Block 1	500	175,38	R876,91	R1 008,45
Block 2	1000	201,27	R402,54	R462,92
Block 3	2000	216,12	R0,00	R0,00
Block 4	3000	228,02	R0,00	R0,00
Block 5	> 3000	239,21	R0,00	R0,00
Sub-total			R1 279,45	R1 471,38
Service charge			R181,94	R209,23
Capacity charge			R535,98	R616,37
Total charge for the month			R1 997,37	R2 296,98
Energy only (c/kWh)			182,78	210,20
Average selling price (c/kWh)			285,34	328,14

[Adapted from Joburg.org.za]

ANNEXURE B**QUESTION 2.1****AMANCIO GONZALEZ'S TOP 9 MOTIVATIONAL BOOKS**

		
# R360	R139	R149
		
R357	R189	# R225
		
R352	# R295	# R279

[Adapted from Takealot 27 September 2023]

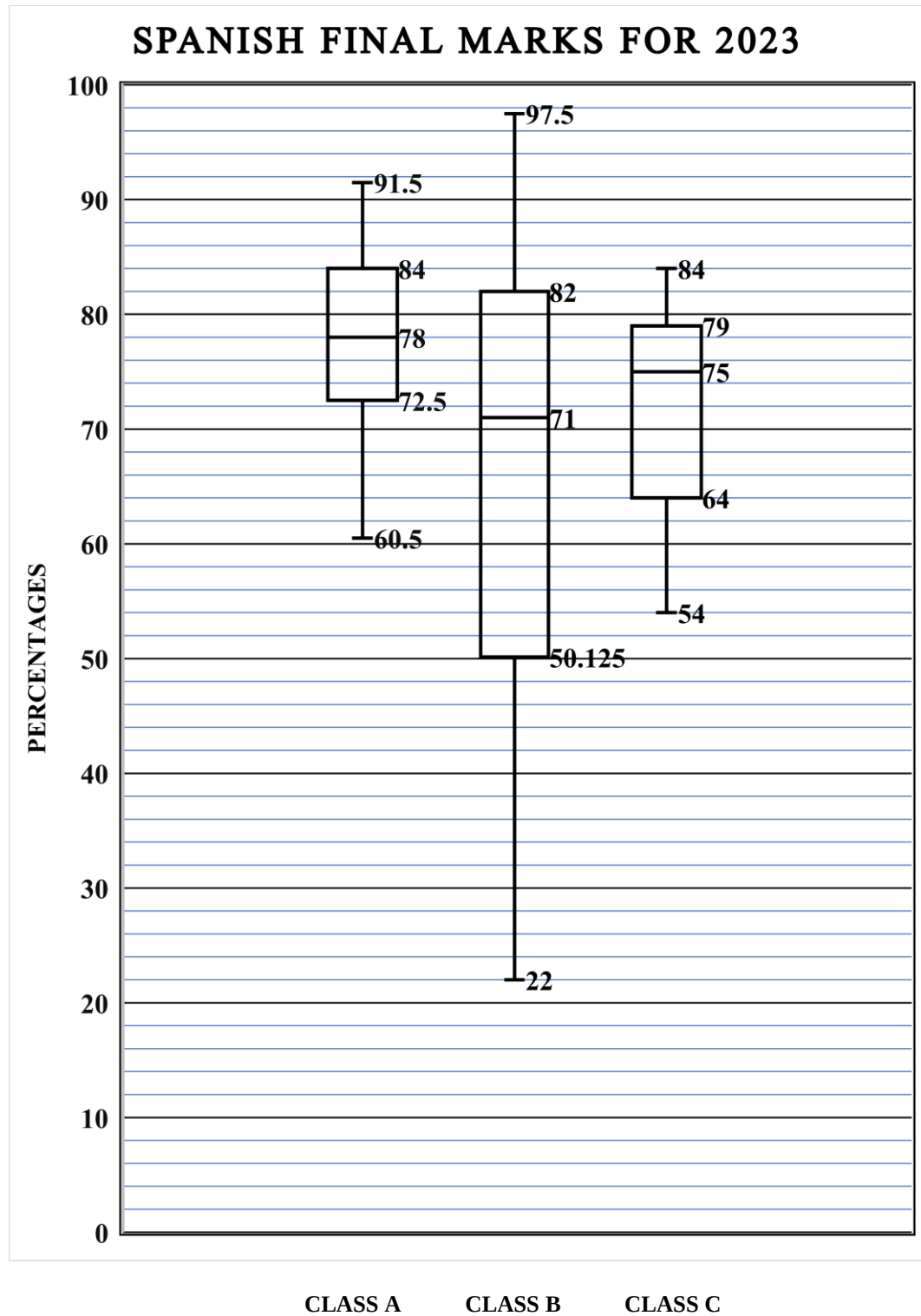
ANNEXURE C**QUESTION 3.1****TABLE 4: PILGRIMS THAT COMPLETED THE CAMINO DE SANTIAGO IN THE YEARS 2019 TO 2022**

Months	2019	2020	2021	2022	TOTAL
January	1 651	1 999	60	1 617	B
February	2 119	3 076	14	1 894	7 103
March	7 474	1 710	194	7 389	16 767
April	31 721	0	1 024	34 283	67 028
May	46 672	0	4 295	48 254	99 221
June	49 057	12	14 824	58 012	121 905
July	53 319	9 752	35 963	67 374	166 408
August	62 814	A	43 575	85 842	212 043
September	45 649	10 441	37 463	66 196	159 749
October	36 115	6 418	31 170	51 356	125 059
November	8 237	586	9 094	11 283	29 200
December	2 710	99	1 193	4 682	8 684
TOTAL	347 538	53 905		438 182	1 018 494

[Adapted from Vivecamino.com]

ANNEXURE D**QUESTION 4.1**

SPANISH RESULTS OF MR ALEJANDROS CLASSES OF 2023 IN PERCENTAGES.



[Adapted from learner's marks]

ANNEXURE E**QUESTION 5.2****TABLE 6: INCOME TAX OF INDIVIDUALS AND TRUSTS FOR
(YEAR ENDING 28 February 2024)**

Tax Bracket	Taxable Income (in Rand)	Rate of Tax (in Rand)
1	0 – 237 100	18% of taxable income
2	237 101 – 370 500	42 678 + 26% of taxable income above 237 100
3	370 501 – 512 800	77 362 + 31% of taxable income above 370 500
4	512 801 – 673 000	121 475 + 36% of taxable income above 512 800
5	673 001 – 857 900	179 147 + 39% of taxable income above 673 000
6	857 901 – 1 817 000	251 258 + 41% of taxable income above 857 900
7	1 817 001 and above	644 489 + 45% of taxable income above 1 817 000

Tax rebate type	2023/2024
Primary (All individuals)	R17 235
Secondary (Age 65 to below 75)	R9 444
Tertiary (Age 75 and older)	R3 145

Tax thresholds	2023/2024
Below age 65	R95 750
Age 65 to below 75	R148 217
Age 75 and older	R165 689

Medical Aid ~ monthly tax credits	2023/2024
Main member	R364
First dependant	R364
Each additional member	R246

[Adapted from onlinetax.sagesouthafrica.co.za]

MATHEMATICAL LITERACY

2024 PREPARATORY EXAMINATION

PAPER 1 ADDENDUM

QUESTION 1		
1.1.1	CA if 1 value is omitted.	
1.1.2	Difference = $2\,194 - 3\,280$ = 1 086 (full marks) If Difference = $2\,194 - 3\,280$ = -1 086 (award 1 mark out of 2)	
1.1.3	Day 31 (award 1 mark out of 2) 32 697 or 25,46 or 2 293 (award 1 mark out of 2)	
1.1.4	If 1 value omitted (award 1 mark out of 2) If Ascending order (award 1 mark out of 2)	
1.1.5	No penalty for order If $2\,084 : 3\,280$ 1: 1,57 OR 0,64: 1 (full marks) If $2\,084 : 3\,280$ $\therefore \frac{521}{820}$ (full marks)	
1.1.6	CA answer if incorrect RT but correct method.	
1.2.1	No penalty for omitting unit	
1.2.3	$238,36 \div 100$ = R2,3836 (award 1 mark for CA answer)	
1.2.4	$R285,34 - R204,11$ ✓ =R81,23✓ $\therefore R81,23 \times 1,15$ = R93,41 (full marks) If VAT excl values used $R285,34 - R204,11$ =R81,23 (award RT and CA answer)	

QUESTION 2		
2.1.1	Accept Own your morning✓✓ OR Elevate your life✓✓	
2.1.2	$\% \text{ difference} = \frac{249-360}{360} \times 100\%$ $= -30,83\% \text{ (full marks)}$	NPR
2.1.3	Alternative $5 \times 139 = 695$ $695 \div 1,15 = 604,35$ $7 \times 357 = 2\,499$ $2\,499 \div 1,15 = 2\,173,04$ Total = $604,35 + 2\,173,04$ = 2 777,39 (full marks) If Total of 5 copies cheapest = $R139 + R149 + R189 + R225 + R279$ = R981 Total of 7 copies = $7 \times R357$ = R2 499 Total = $R981 + R2\,499$ = R3 480 Total excluding VAT = $R3\,480 \div 1,15$ = R3 026,09 (full marks) If Total of 5 copies cheapest = $R139 + R149 + R189 + R225 + R279$ = R981 Total of 7 copies = $7 \times R360$ = R2 520 Total = $R981 + R2\,520$ = R3 501 Total excluding VAT = $R3\,501 \div 1,15$ = R3 044,35 (Award 5 marks out of 6) If multiplied 5 and 7 with incorrect values, (Award 4 marks out of 6)	
2.1.4	If 255×189 = 42 525 $R42\,525 - R41\,150$ = 1 375 (award 4 out of 6)	
2.1.5	If numerator is wrong, CA answer.	
2.2.1	Alternatives Lack of employment, Gross Domestic Product (GDP), Natural disaster, Crime Note: the responses should relate to the context and/or the key issues highlighted.	
2.2.4	If for Dario $\text{¥}246\,900 \times 0,00633462986 \text{ (from 2.2.2.)}$ = ¥1 564, 020112 (2 marks)	

QUESTION 3		
3.2	Survey is the method of collecting data NOTE: The key word is collection of data	
3.4	AO	
3.5	AO Accept The use of row for January for full marks	
3.6	Accept any rounding i.e. down or up If wrong column used, concept and calculations should be correct. (award 2 marks out of 3)	
3.7	Alternative $\% \text{ difference} = \frac{\check{\text{RT}} \quad \check{\text{M}} \quad \check{\text{RT}}}{\frac{438\ 182 - 347\ 538}{1\ 018\ 494} \check{\text{RT}}} \times 100\% \check{\text{MA}}$ $= \frac{90\ 644 \check{\text{S}}}{1\ 018\ 494} \times 100\%$ $= 8,8998\% \check{\text{A}}$ ∴ Not correct $\check{\text{O}}$	3RT correct values 1M subtraction 1M multiplication by 100% 1S simplification 1A answer 1O opinion
3.8	Accept 100% for Afrikaans paper.	
QUESTION 4		
4.1.3	Accept The correct percentages for class A or class B or class C used, (full marks) OR Five number summary (full marks)	
4.1.5	Alternatives IF IQR used, Class A $\checkmark$ is the best, the IQR $\checkmark\checkmark$ is less. $\checkmark$ If range used; Class A range = $91,5 - 60,5 = 31\checkmark$ Class B range = $97,5 - 22 = 75,5\checkmark$ Class C range = $84 - 34 = 30\checkmark$ ∴ Class C $\checkmark$ is the best, the range is less.	
4.2.2	AO	
4.2.4	Number of boards = $4\ 500 \div 450 = 10$ Number of boards = $(4\ 250 - 2500) \div 175 = 10$ ∴ 9 charcuterie boards (Full marks) Accept 10 OR Income = $450 \times 10 = 4\ 500$ Expense = $2500 + 175 \times 10 = 4\ 250$ ∴ 9 charcuterie boards (Full marks) Accept 10 OR	

	Number of boards = $4\,050 \div 450$ = 9 $\therefore$ 9 charcuterie boards (Full marks) Accept 10 OR Number of boards = $(4\,075 - 2500) \div 175$ = 9 $\therefore$ 9 charcuterie boards (Full marks) Accept 10	
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QUESTION 5		
5.1.3	Alternative Rebate for 1 Solar Panel = $R4\,000 \times 25\%$ ✓ = $R1\,000$ ✓ Rebate for 6 Solar panels = $6 \times R1\,000$ ✓ = $R6\,000$ ✓ CA number of panels from 5.1.1	
5.1.4	Alternative Total monthly repayment = $R85\,000 \times 1,125 \times 1,125 \div 24$ ✓ = $R4\,482,42$ ✓	1RT loan amount 1M multiplication by 1,125 1M multiplication by 1,125 2M dividing by 24 1A answer
5.2.1	AO	
5.2.2	AO	