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)

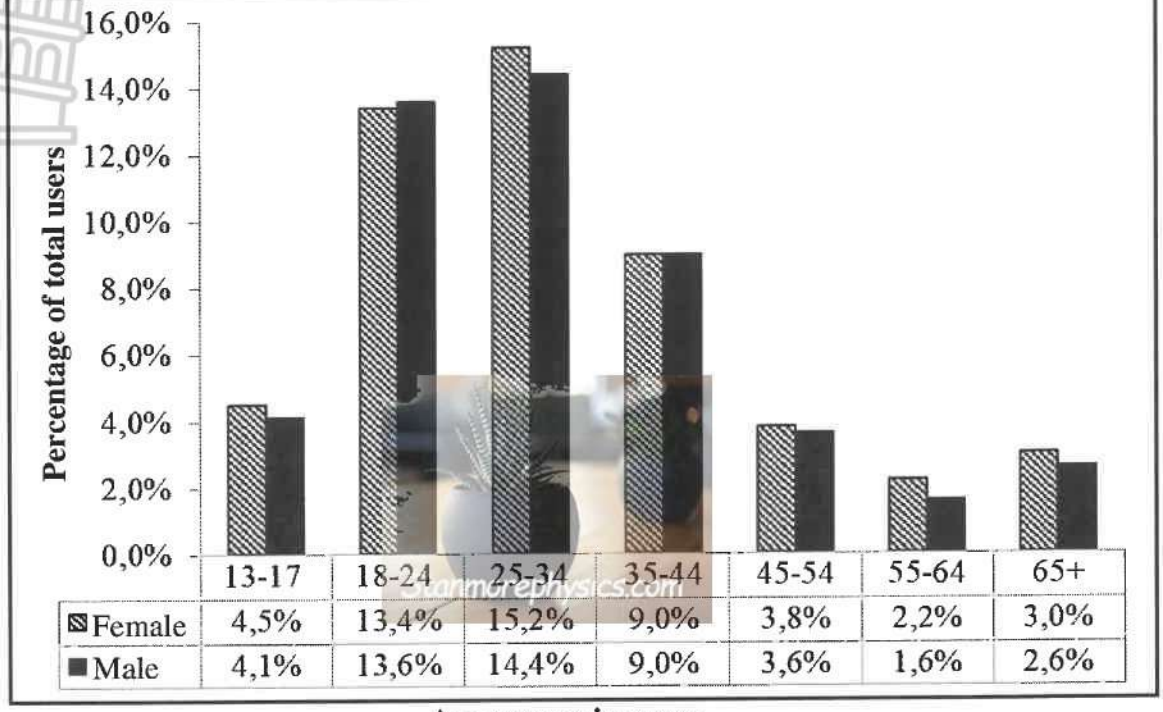
1.1.4 Write down the standard delivery cost for an order of R700. (2)

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.

DISTRIBUTION OF SOCIAL MEDIA USERS IN SOUTH AFRICA



	13-17	18-24	25-34	35-44	45-54	55-64	65+
Female	4,5%	13,4%	15,2%	9,0%	3,8%	2,2%	3,0%
Male	4,1%	13,6%	14,4%	9,0%	3,6%	1,6%	2,6%

[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	Higgovale	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://businesstech.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 Calcutate 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 surburbs 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:

$$\textbf{Percentage increase} = \frac{\textbf{ticket price 2024 - ticket price 2023}}{\textbf{ticket price 2023}} \times 100\%$$ (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.

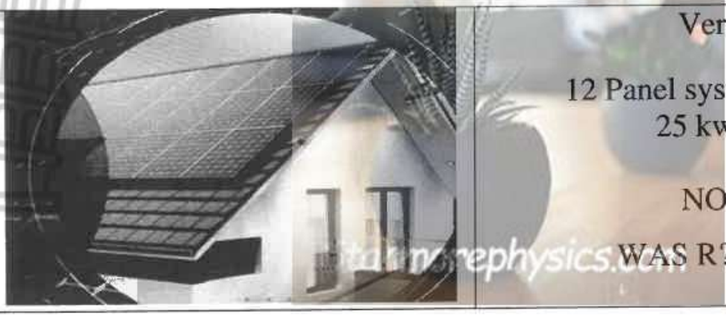


TABLE 3 show the payment options for the solar panel system.

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.

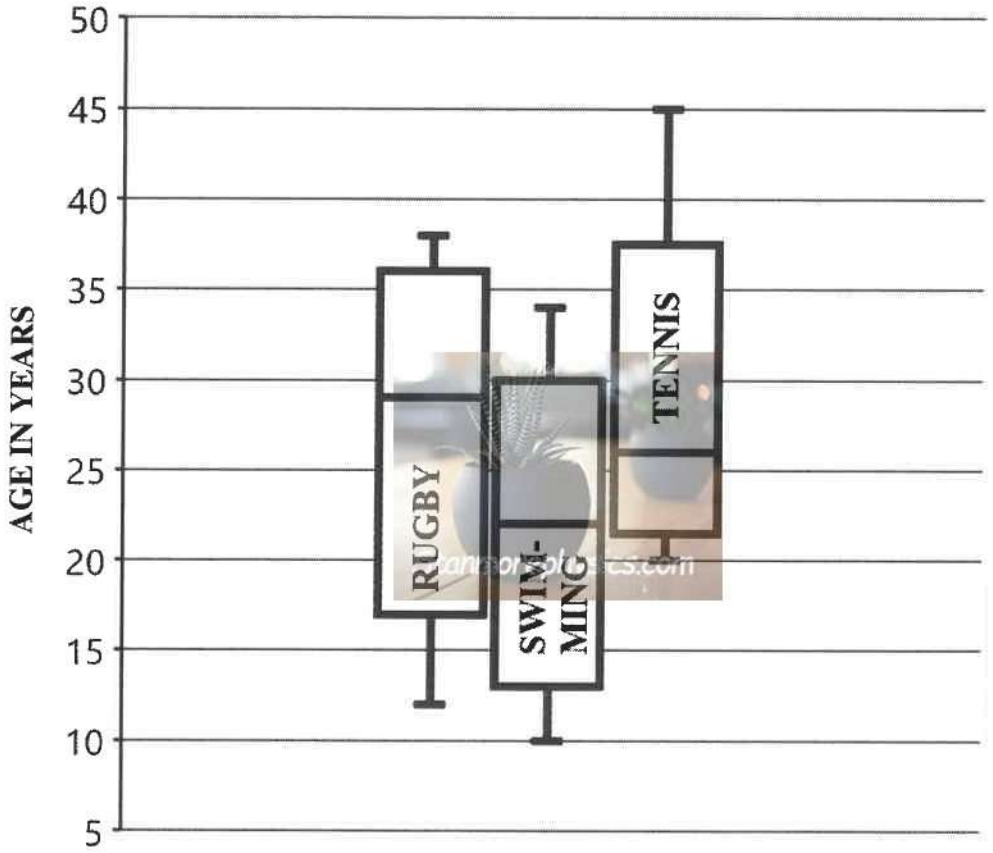
Verify, by showing ALL calculations, if his claim is valid. (5)

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:

IQR = Q3 – Q1 (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)

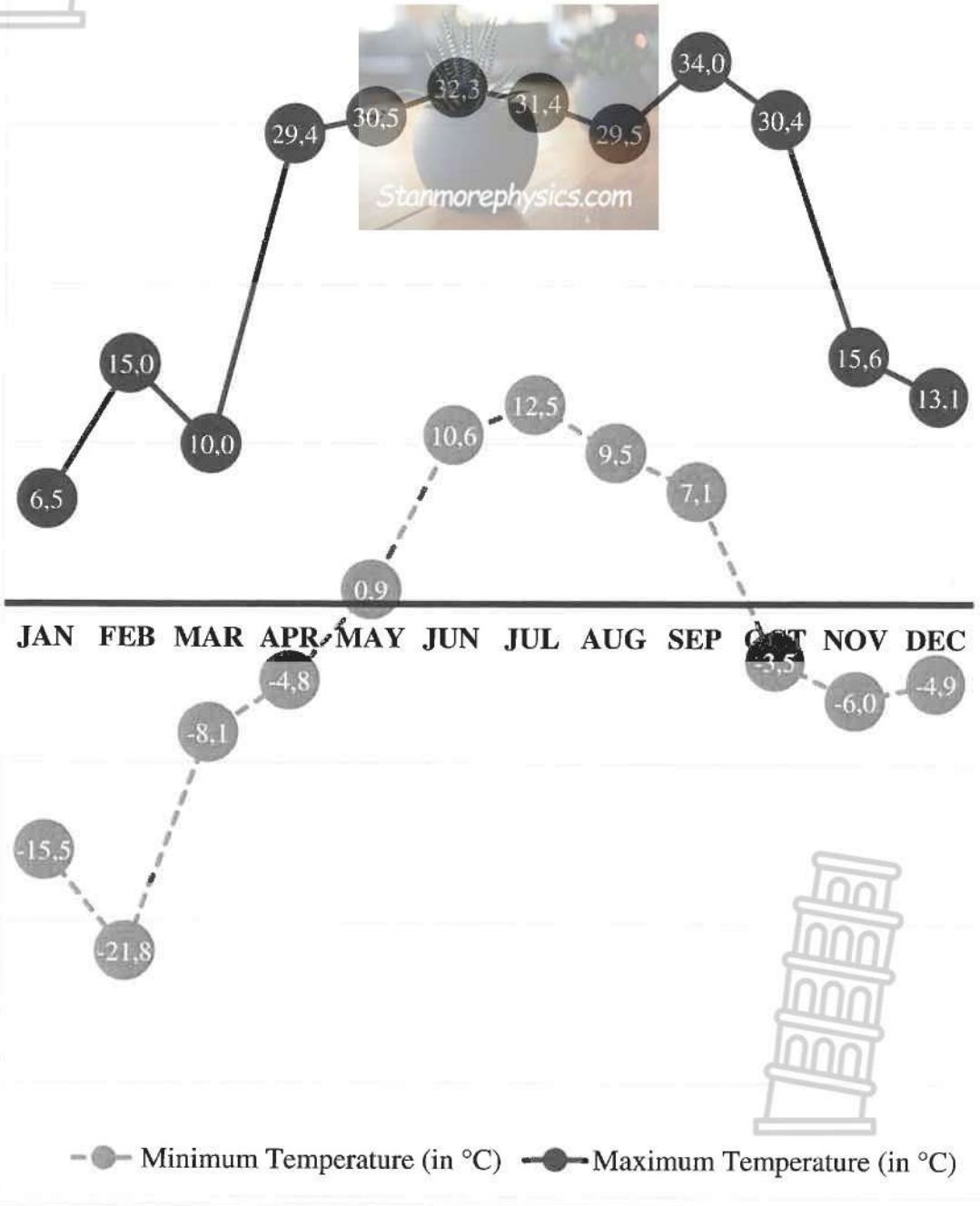
5.1.4 Mr Nkosi claims that his monthly tax for the 2023/24 tax year is more than $\frac{1}{6}$ of his monthly taxable income.

Verify, showing ALL calculations, if this statement is correct. (8)

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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VRAESTEL/PAPER 1

SEPTEMBER 2024

ADDENDUM

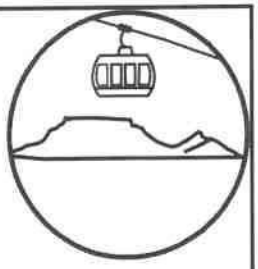
Hierdie addendum bestaan uit 4 bladsye met 3 bylaes./
This addendum consists of 4 pages with 3 annexures.

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	¼ of adult morning return cost	R60	¼ 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 EMPLOPYEES IN ALL 5 REGIONS

SEASONAL → 86 870

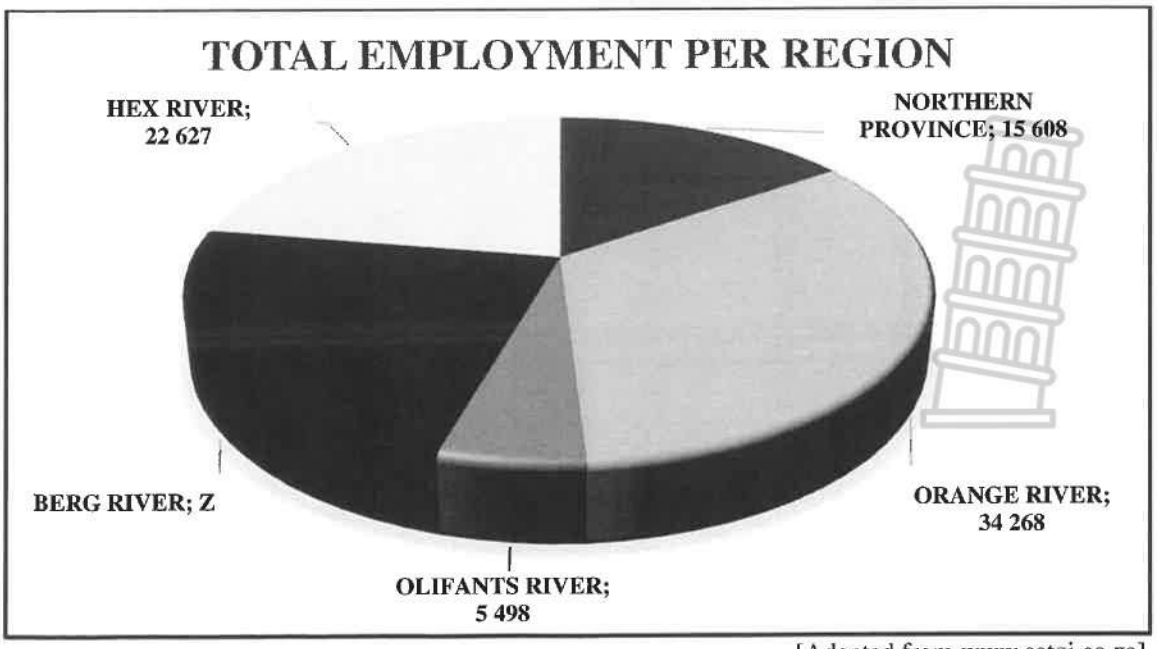
PERMANENT → ?

TOTAL IN SOUTH AFRICA

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	M 24 472	M 4 142	M 16 416	M 13 600
F 3 348	F 6 118	F 619	F 4 011	F 4 101
Permanent: 2 217	Permanent: 3 678	Permanent: 737	Permanent: ?	Permanent: 4 926
M 2 107	M 3 457	M 670	M ?	M 4 630
F 110	F 221	F 67	F ?	F 296
Total: 15 608	**Total: 34 268**	**Total: 5 498**	**Total: Z**	**Total: 22 627**

Key		
	M:	Male
	F:	Female



[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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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/Free/Gratis ✓✓A	2A correct delivery cost (2)	F L1
1.1.5	Number of boxes/*Aantal bokse* $= \frac{27}{12}$ ✓MA = 2,25 = 3 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/*Persentasie verskil* = 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**/*Waarde van **A*** $= \frac{35,5}{100} \times 54$ ✓MA = 19,17 ✓A ✓RT	 1MA calculating 35,5% of 54 1A simplification (2)	F L1
1.3.3	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/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	6 people/*mense* ✓✓A	2A correct number (2)	F L1
2.1.2	Percentage increase $= \frac{\text{R250} - \text{R230}}{\text{R230}} \times 100\%$ ✓MA ✓MA ✓A $= 8{,}695652174\%$ $= 9\%$ ✓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/*Retoerkoste vir senior burgers* $= (\frac{1}{4} \times \text{R420})$ ✓MA $= \text{R105}$ ✓A Total cost after 13:00 / *Totale koste na 13:00* ✓MA ✓MA $= (2 \times \text{R360}) + (3 \times \text{R130}) + \text{R105}$ $= \text{R720} + \text{R390} + \text{R105}$ ✓MCA $= \text{R1 215}$ ✓CA Amount saved/*Besparing* $= \text{R1 365} - \text{R1 215}$ ✓MCA $= \text{R150}$ ✓CA	1MA calcatute 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/*Hulle verdien nie 'n inkomste nie.* ✓✓O **OR/*OF*** Students received student discount/*Studente ontvang student afslag.* ✓✓O **OR/*OF*** Students are more likely to support businesses that offer discount/*Studente is meer geneig om besighede te ondersteun wat afslag bied.*✓✓O	2O valid reason 2O valid reason 2O valid reason (2)	F L4

Q/*V*	Solution/*Oplossing*	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./ *Jy koop die sonpanele teen 'n maandelikse paaiement. Eers ná jou finale paaiement word die sonpanele jou eiendom.*	2A explanation (2)	F L1
2.2.2	Amount excluding VAT/*Bedrag BTW uitgesluit* $= \frac{R224\ 660}{1,15}$ ✓MA = R195 356,52 Vat Amount/*BTW bedrag* = R224 660 – R195 356,52 ✓MCA = R29 303,48 ✓CA **OR/*OF*** $= \frac{R224\,660}{115} \times 15$ ✓MCA ✓MA = R29 303,48 ✓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 × 60) + (R105 × 60) ✓MA ✓MA = R26 960 + R324 000 + R6 300 ✓CA ✓CA ✓MCA = R357 260 ✓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/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.4	Division of monthly installment/ *Verdeling van maandelikse paaiement* $5 + 3 = 8$ ✓A Mr Johnson $= \frac{5}{8} \times R5\,400$ ✓MA $= R3\,375$ ✓CA Mrs Johnson $= \frac{3}{8} \times R5\,400$ $= R2\,025$ ✓MCA Difference/*Verskil* $= R3\,375 - R2\,025$ $= R1\,350$ ✓MCA His claim is VALID/*Sy bewering is GELDIG* ✓O **OR/*OF*** Division of monthly installment/ *Verdeling van maandelikse paaiement* $5 + 3 = 8$ ✓A $\frac{5}{8} - \frac{3}{8}$ ✓MA $= \frac{2}{8}$ ✓CA Difference/*Verskil* $= \frac{2}{8} \times R5\,400$ ✓MCA $= R1\,350$ ✓MCA His claim is VALID/*Sy bewering is GELDIG* ✓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 (6)	F L4
		[33]	

QUESTION/*VRAAG* 3 [25 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1	✓MA A = 21 100 – (2 522 + 5 857 + 4 934 + 6 563) 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*** ✓✓A Multiple Bar Graph/*Meervoudige staafgrafiek*	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 ✓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/*Tendens vanaf 2018 tot 2023* ✓O From 2018 to 2019, there was an <u>increase</u> in production/ *Vanaf 2018 tot 2019 was daar 'n <u>toename</u> in produksie* ✓O From 2019 to 2023, production <u>decreased</u>/ reduction annually/ *Vanaf 2019 tot 2023 het die produksie jaarliks <u>afgeneem</u>/vermindering*	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/*Hex Rivier* ✓✓RT	2RT region (2)	D L1
3.2.3	✓MA ✓MA $20\,343 \times 5 = 15\,608 + 34\,268 + 5\,498 + 22\,627 + Z$ $101\,715 = 78\,001 + Z$ $Z = 101\,715 - 78\,001$ ✓MCA $Z = 23\,714$ ✓CA **OR/*OF*** Value of Z/*Waarde van Z* ✓MA $20\,343 = \frac{15\,608 + 34\,268 + 5\,498 + Z + 22\,627}{5}$ ✓MA $20\,343 = \frac{78\,001 + Z}{5}$ $Z = (20\,343 \times 5) - 78\,001$ ✓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/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.4 *	Probability/*Waarskynlikheid* $= \frac{24472+13600}{86870}$ ✓RT ✓MA ✓A $= \frac{38072}{86870}$ = 0,4382640728 ✓CA = 0,44 ✓R **OR/*OF*** $= \frac{24472}{86870} + \frac{13600}{86870}$ ✓RT ✓A = 0,2817082998 + 0,156555773 ✓MA = 0,4382640728 ✓CA = 0,44 ✓R	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 ÷ 60 ✓MA = R6,95 ✓A Unit cost of butter/*Eenheidskoste van botter* = R48 ÷ 80 = R0,60 ✓A Unit cost of cheese/*Eenheidskoste van kaas* = R135,84 ÷ 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 verskikllende winkels* Econo Foods = R185,40 ÷ 60 = R3,09 Makro = R72,89 ÷ 18 = R4,05 Food and More = R86,88 ÷ 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/*Eenheidskoste van patties* = R417 ÷ 60 ✓MA = R6,95 ✓A Unit cost of butter/*Eenheidskoste van botter* = R48 ÷ 80 = R0,60 ✓A Unit cost of cheese/*Eenheidskoste van kaas* = R135,84 ÷ 48 = R2,83 ✓A Unit cost of bread roll/*Eenheidskoste van broodrolletjie* ✓MCA R14 – R6,95 – R0,60 – R2,83 = R3,62 Bulk price bread rolls/*Grootmaat prys broodrolletjies* ✓MCA = R3,62 × 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/*Rudi se bewering is verkeerd* ✓O **OR/*OF*** Profit/*Wins* $= R14 \times \frac{80}{100}$ ✓MA = R11,20 ✓A Selling price /*Verkoopsprys* =R14 + R11,20 ✓MCA = R25,20 ✓CA R25,20 > R25 Rudi's claim is invalid/*Rudi se bewering is verkeerd* ✓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

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 $= R77\,362 + R26\,319$ ✓MA ✓MCA = R103 681 – R17 235 – R14 640 = R71 806 ÷ 12 = R5 983,83 ✓MCA ⅙ of monthly taxable income/ *⅙ van maandelikse belasbare inkomste* = R455 400 ÷ 12 ✓MA $= R37\,950 \times \frac{1}{6}$ = 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 ⅙ and simplification 1O conclusion (8)	F L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	
5.2.1 *	No mode/*Geen modus* **OR/*OF*** None/*Geen* ✓✓A	2A no mode (2)	D L2
5.2.2 *	Range/*Omvang* ✓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/*Totale akkomodasie koste* ✓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/*Sy bewering is nie geldig nie* ✓O **OR/*OF*** Total accommodation cost/*Totale akkomodasie koste* ✓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/*Sy bewering is nie geldig nie* ✓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/*Totale akkomodasie koste* ✓RT = CAD 85,45 × 4 × 6 ✓MA = CAD 2 050,80 ✓CA $\frac{\text{ZAR } 28\,000}{13{,}980936}$ ✓MCA = CAD 2002,73 ✓CA His claim is not valid/*Sy bewering is nie geldig* ✓O **OR/*OF*** Total accommodation cost/*Totale akkomodasie koste* ✓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/*Sy bewering is nie geldig* ✓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	$= \frac{35{,}5}{100} \times 54$ ✓MA 19 170 000	1 / 2 marks
QUESTION 2		
2.1.3	Return cost for senior citizens/*Retoerkoste vir senior burgers* $= (\frac{1}{4} \times R420)$ ✓MA = R105 ✓A Total cost after 13:00 / *Totale koste na 13:00* ✓MA ✓MA = (2 × R360) + (3 × R130) + R105 = R720 + R390 + R105 ✓MCA = R1 215 ✓CA Amount saved/*Besparing* = R1 335 – R1 215 ✓MCA =R120 ✓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/*Waarskynlikheid* ✓RT ✓MA $= \frac{24\,472 + 13\,600}{86\,870}$ ✓A $= \frac{38\,072}{86\,870}$ ✓CA = 0,4382640728 ×100 = 43,82640728 % = 43,83 % ✓R	5 / 5 marks

QUESTION 4		
4.2.3	Other sport	2 / 4 marks
QUESTION 5		
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 $= R77\,362 + R26\,319$ ✓MA ✓MCA = R103 681 – R17 235 – R14 640 = R71 806 ÷ 12 = R5 983,83 ✓MCA Monthly taxable income/ *Maandelikse belasbare inkomste* = R455 400 ÷ 12 ✓MA =R37 950 $\frac{R5\,983.83}{R37\,950}$ ✓MCA $= 0{,}15768$ $\frac{1}{6}$ $= 0{,}16667$ ✓O His claim is not valid/*Sy bewering is nie geldig nie*	8 / 8 marks
5.2.1	0	0 / 2 marks
5.2.2	-21,5 - 12,5 = -34,3	2 / 3 marks