education

Department of
Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION

GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2023

MARKS: 150

TIME: 3 HOURS

This question paper consists of 13 pages and an addendum with 4 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 2.1
   - ANNEXURE B for QUESTION 4.1
   - ANNEXURE C for QUESTION 4.1.3
   - ANNEXURE D 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.   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 Thando received the slip below after purchasing prepaid water at one of the approved vendors.

PREPAID WATER SLIP

Blue Approved
Tax Invoice
Mangaung Metropolitan Municipality
Credit Token
3974 0445 6670
6712 5026

6 kℓ	@ 9,6600 R/kℓ	= R57,96
9 kℓ	@ 22,7200 R/kℓ	= R204,48
15 kℓ	@ 25,2300 R/kℓ	= ...
22, 4 kℓ	@ 29,6900 R/kℓ	= R665,056

Amount: R1 305,95
VAT @ 15%:   R195,89

Total: R1 501,84

Free Units: 0,00 kℓ
Credit Units: 52,40 kℓ
                    Total Units : 52,50 kℓ

Receipt No: 01166515
Meter No: 41150801599
Date: 25/02/2022   18:20:27

[Adapted from actual slip]

Use the information above to answer the questions that follow.

1.1.1 Write down Thando's water meter number. (2)

1.1.2 Identify the maximum number of kilolitres that can be bought at R9,6600 per kilolitre. (2)

1.1.3 Write down in full the type of tax charged for water as shown in the context above. (2)

1.1.4 Show how the VAT amount was calculated. (2)

1.1.5 Define the term *tariff* in the given context. (2)

1.1.6 Determine the missing value, the cost of using 15 kℓ of water in the context above. (3)

1.2 Below is the monthly number of trips made by two local taxis between Thaba-Nchu and Botshabelo from January to December.

TAXI 1

104 103 124 130 118 118 42 110 121 108 113 117

TAXI 2

74 87 90 98 103 105 110 112 119 120 117 126

Use the information above to answer the questions that follow.

1.2.1 State whether the data above is regarded as numerical or categorical. (2)

1.2.2 Identify the outlier of the monthly taxi trips. (2)

1.2.3 Arrange, in ascending order, the number of monthly trips for TAXI 1. (2)

1.2.4 Determine the month in which the most trips were made by TAXI 2. (2)

1.2.5 The *IQR* for TAXI 1 is 13,5. Write out *IQR* in full. (2)

1.3 | Mpumi crafts wooden birds that he sells at a tourist attraction in Mpumalanga.

* The birds will be black (B) or white (W) in colour.
* Each bird will have a touch of either red (R), yellow (Y) or green (G) colour.

EXAMPLE OF WOODEN BIRDS

The table below illustrates the different options of bird colour and touch.

	Red touch	(i)	Green touch
Black bird	BR	BY	BG
White bird	(ii)	WY	WG

Study the information above to answer the questions that follow.

1.3.1 Name the type of illustration represented by the table above. (2)

1.3.2 Complete the missing labels (**i**) and (**ii**). (4)

1.3.3 Determine the total number of possible outcomes. (2)

[31]

QUESTION 2

2.1 | TABLE 1 on ANNEXURE A, indicates the expenditure in different National Departments in the South African government.

Use TABLE 1 on ANNEXURE A to answer the questions that follow.

2.1.1 Explain the meaning of the term *employee* in this context. (2)

2.1.2 Show how the total amount of 522,8 was calculated. (2)

2.1.3 Give ONE possible reason why the expenditure for the compensation of employees in the basic education department is higher than that of other departments. (2)

2.1.4 The Department of home affairs was allocated a total of R11,2 billion in 2019/20 financial year.

Calculate the percentage expenditure incurred by this department in 2019/20 and state whether the department had a surplus or a deficit. (4)

2.1.5 Give ONE example of the type of transport that can be purchased by the department of police services. (2)

2.1.6 The capital spending for community development in 2018/2019 was R520 000 000 less than that of 2019/20.

Determine the capital spending in 2018/19. (4)

2.1.7 The South African government decided to invest R50 000 000 from the contingency reserve at an interest rate of 6,8%, compounded annually, for 1 year and 6 months.

Calculate the final amount at the end of the investment period. (5)

2.2 | Thabo who is an employee at the department of health is banking at STAN bank.

TABLE 2 below indicates the banking fees at STAN bank.

TABLE 2: STAN BANK 2021/2022 BANKING FEES.

	2021 Fees	Transaction Fee for R500 in 2021	2022 Fees	Transaction Fee for R500 in 2022	% Change
Withdrawal (Own bank)	R7,50 per R1000	R7,50	R2,00 per R100	R10,00	...
Withdrawal (Other banks)	R10,00 per R1000	R10,00	R2,20 per R1000	R11,00	+10,0%
Withdrawal (Point of Sale)	R1,40	R1,40	R1,40	R1,40	0%
Deposit (ATM)	R9,00 per R1000	R9,00	R1,00 per R100	R5,00	-44,4%
Debit order (internal/external)	R3,50		R3,50		0%
Account fee	R110,00		R110,00		0%

[adapted source: www.businesstech.co.za]

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

2.2.1 Determine the percentage change between 2021 and 2022 of the transaction fees for a withdrawal at Thabo's own bank. (4)

2.2.2 Thabo made a withdrawal of R2 000 in 2022. He then stated that he saved more than R30,00 in banking fees when withdrawing from the point of sale compared to his own bank.

Verify, showing all calculations, if his statement is valid. (6)

[31]

QUESTION 3

3.1   TABLE 3 below shows the number of household crime records in South Africa for the past 5 years.

TABLE 3: NUMBER OF HOUSEHOLD CRIMES IN SOUTH AFRICA

Types of crime	Number of crimes (in thousands)				
	2018	2019	2020	2021	2022
House breaking	2 171	2 214	2 270	1 935	2 199
Home robbery	459	449	415	312	394
Theft of motor vehicle	233	256	277	212	163
Deliberate damage to property	98	160	182	**	**
Murder	43	53	53	43	40
Assault	**	**	117	125	213
Sexual offences	**	**	39	25	32
TOTAL	**3 004**	**3 132**	---		**3 041**

[Source: www.statssa.gov.za]

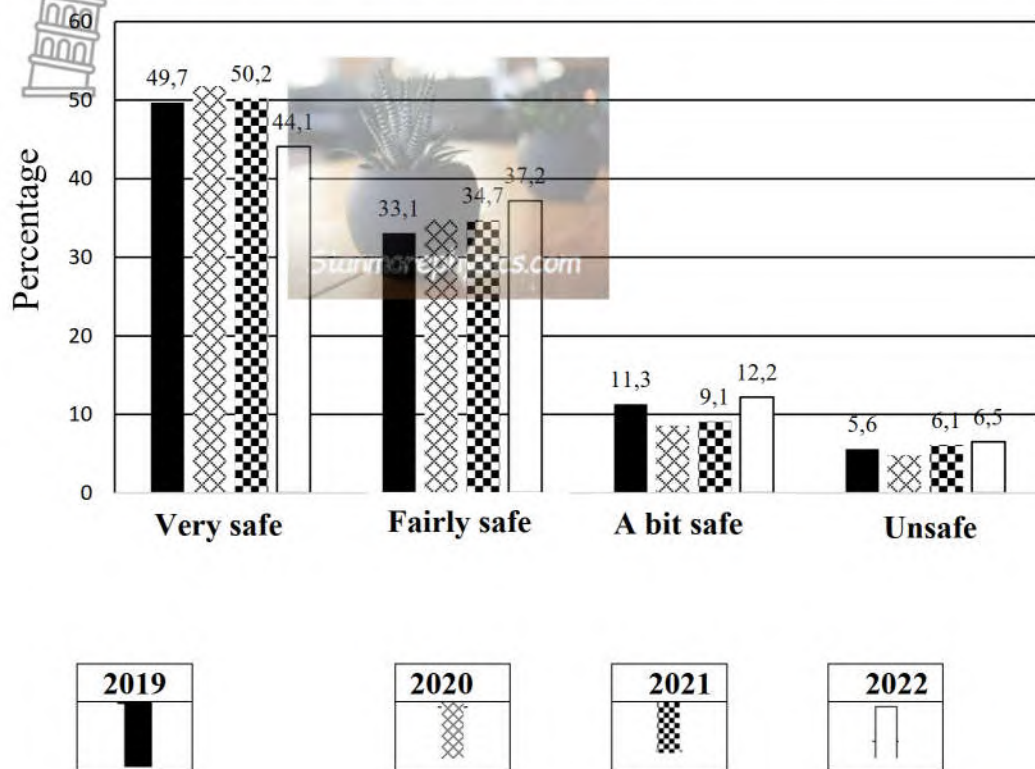Use TABLE 3 above to answer the questions that follow.

3.1.1   State the data collection tool used to collect the above data.   (2)

3.1.2   Show how the value of 3 041 was calculated.   (2)

3.1.3   Write down the number of home robberies in 2019.   (2)

3.1.4   Calculate the mean number of home robberies in South Africa from 2018 to 2022.   (4)

3.1.5   Give a possible reason why some crimes are illustrated by the symbol (**).   (2)

3.2 The graph below indicates the safety level of people in their residential area during the day.

FEELING OF SAFETY (in %) WHEN WALKING IN THE RESIDENTIAL AREA DURING THE DAY FROM 2019 TO 2022.

[Source: www.statssa.gov.za]

Use the information above to answer the questions that follow.

3.2.1 Name the type of graph drawn above. (2)

3.2.2 Determine the increase in the percentage of people who felt fairly safe between 2019 and 2022. (3)

3.2.3 The number of people who felt unsafe when walking in a residential area during the day in 2020 was 2,85 million.

Determine the number of people (to the nearest 100 000) in South Africa in 2020. (3)

3.2.4 The percentage range for the people who felt very safe is 7,7% and the lowest percentage is 44,1%.

Calculate the highest percentage of the people who felt very safe. (4)

[24]

QUESTION 4

4.1 | Mr Jones, a 43-year-old teacher received the tax document on ANNEXURE B for the tax year 2021/2022.

Mr Jones is also a medical aid member and contributes to himself and his daughter.

The medical tax credits for the tax year 2021/2022 are given in TABLE 4 below:

TABLE 4: MEDICAL TAX CREDITS FOR THE TAX YEAR 2021/2022

	Amount
Main member	R332
First dependent	R332
Each additional dependant	R224

[Source: www.sars.gov.za]

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

4.1.1 State the name of this tax certificate. (2)

4.1.2 Write down the number of months covered by this tax document. (2)

4.1.3 TABLE 5 and 6 on ANNEXURE C show the tax table and tax rebates for the 2021/2022 tax year.

Calculate **B**, the amount of tax Mr Jones paid for the 2021/2022 tax year. (6)

4.1.4 Mr Jones stated that his employer calculated his medical tax credits incorrectly.

Verify, showing all calculations, whether his statement is valid. (4)

4.1.5 The inflation rate in 2022 was 7,8%, 4,5% in 2021 and in 2020 it was 3,3%. Mr Jones' salary was R499 413 in 2022.

Mr Jones received an inflation-related salary increase in 2022, a monthly increase of R1 000 in 2021 and no salary increase in 2020.
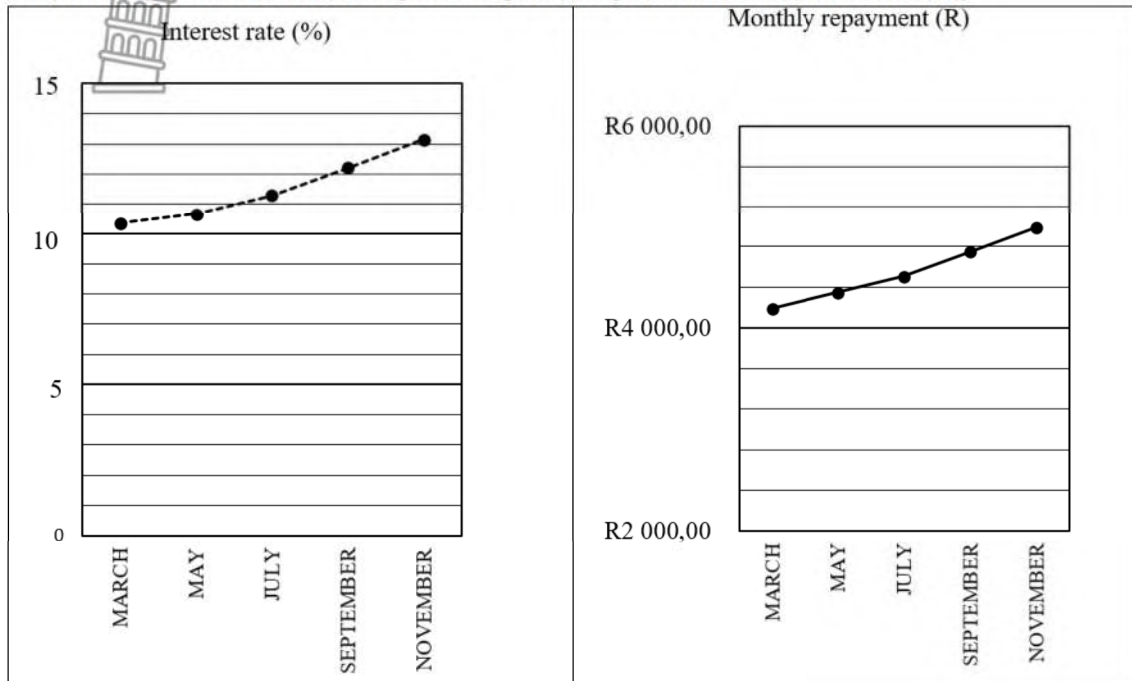
Show with calculations that his salary was R451 277,37 in 2019. (5)

4.2 Joseph has a home loan of R500 000 to be paid over a period of 20 years.

The graph below shows the interest rate and home loan monthly repayments for Joseph for six months in 2022.

INTEREST RATE AND HOME LOAN MONTHLY REPAYMENTS

VALUE OF MONTHLY REPAYMENTS:

March = R4 190,6 ; **May** = R4 345,45; **July** = R4 505,06;
September = R4 749,16 and **November** = R4 988,62

[Adapted from actual home loan statement]

Use the information above to answer the questions that follow.

4.2.1 Explain why the data above is regarded as continuous. (2)

4.2.2 Identify (a) month(s) with an interest rate higher than 11,5%. (2)

4.2.3 Describe any trend shown by the two graphs in relation to each other. (2)

4.2.4 Joseph complained that his monthly repayments will increase by more than R500 from July to September.

Verify, showing all calculations, whether his complaint is valid. (3)

4.2.5 Provide ONE possible reason for how the increase in the interest rate will negatively affect the finances of the homeowners. (2)

4.2.6 State ONE benefit of paying extra hundred rands in addition to the expected instalment in the given context above. (2)

[32]

QUESTION 5

5.1 | The pie chart on ANNEXURE D indicates the net worth (in billion dollars) of the top 5 richest persons in the World, Africa and South Africa.

Use the information on ANNEXURE D to answer the questions that follow.

5.1.1 Write down the TOTAL NET WORTH amount shown for the five wealthiest people in the world in numerical. (2)

5.1.2 Express as a ratio (in the simplest form), the total net worth of the richest persons in South Africa, Africa and the World respectively. (3)

5.1.3 Calculate the net worth of the third wealthiest person in the world. (3)

5.1.4 Determine the difference in net worth between the wealthiest person in Africa and the wealthiest person in South Africa. (3)

5.1.5 Convert the net worth of \$5,4 billion to rands if the exchange rate is R1 = \$ 0,057. Round off the net worth to the nearest billion. (3)

5.2 | Abel is a metered taxi driver. His company charges the following fare for a single trip:

- A minimum call-out fee of R50 per trip with the first THREE kilometres being free.
- Thereafter, R15,00 for each additional kilometre or part thereof.
- The company charges an extra R200,00 per hour if the taxi must wait for a client and the trip will be charged as a single trip.

TABLE 7 below shows the total cost per single trip for different distances travelled.

TABLE 7: TOTAL COST PER SINGLE TRIP FOR DIFFERENT DISTANCES TRAVELLED

Distance (in km)	0	1	3	5	10	20	30
Total cost per single trip (in rands)	0	50	50	80	A	305	455

Use TABLE 7 and the information above to answer the questions that follow.

5.2.1 Explain the meaning of the term *single trip* in this context. (2)

5.2.2 Calculate the value of **A**. (3)

5.2.3 Write down an equation that Abel can use to calculate the total cost (in rands) per single trip, in the form:

Total cost (in rands) per single trip = … (2)

5.2.4 A client pays Abel R1 505 for a single trip. Determine the total distance (in km) travelled during this trip. (5)

5.2.5 Doris hires a taxi from this company to take her to a meeting venue 20 km from her home. The meeting is scheduled to take exactly ONE hour, and she requests that the taxi wait for her to take her back home.

Doris claimed that it was going to be cheaper for her if she could have called the taxi back after her meeting, instead of making it wait for her.

Verify, showing all calculations, whether her claim is valid. (6)

[32]

TOTAL: 150

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FREE STATE PROVINCE

PREPARATORY EXAMINATION

GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2023

MARKS: 150

ADDENDUM

This addendum consists of 5 pages with 4 annexures.

ANNEXURE A

QUESTION 2.1

TABLE 1: TOTAL EXPENDITURE BY NATIONAL DEPARTMENTS IN 2019/20 FINANCIAL YEAR.

	Compensation of employees	Purchasing of goods and services	Capital spending	Current transfers and subsidies	Interest payment	Total
	R (in billions)	R (in billions)	R (in billions)	R (in billions)	R (in billions)	R (in billions)
Basic education	204,4	26,2	12,0	19,7	0	262,3
Post-school education and training	11,5	2,2	6,5	92,4	0	112,6
Arts, culture, sports and recreation	4,1	3,5	1,5	2,3	0	11,4
Health	140,8	64,7	11,1	6,1	0	222,7
Social protection	14,7	8,3	0,8	183,2	0	207
Social security funds	4,6	4,1	1,2	61,2	0,3	71,4
Community development	17,3	12,3	78,9	100,1	0	208,6
Industrialisation and exports	10,3	3,6	8,8	14,8	0	37,5
Agricultural and rural development	13,0	8,8	6,4	2,5	0	30,7
Job creation and labour affairs	3,5	10,5	0,8	8,4	0	23,2
Economic regulation and infrastructure	21,9	35,6	33,6	3,5	6,6	101,2
Innovation, science and technology	4,8	3,7	1,5	6,6	0	16,6
Defence and state security	26,4	12,0	1,3	10,3	0	50,0
Police services	79,8	19,4	3,6	1,3	0	104,1
Law courts and prisons	33,9	12,0	2,0	0,4	0	48,3
Home affairs	4,7	2,9	0,7	0,2	0	8,5
Executive and legislative organisations	7,9	5,3	0,3	2,6	0	16,1
Public administration and fiscal affairs	20,8	13,6	1,8	5,4	0	41,6
External affairs	2,9	2,3	0,5	1,8	0,1	7,6
Contingency reserve						13,0
Total	**627,3**	**251,0**	**173,3**	**522,8**	**7,0**	**1 581,4**

[Source:www.treasury.gov.za]

ANNEXURE B

QUESTION 4.1

TAX CERTIFICATE FOR THE TAX YEAR 2021/2022

EMPLOYEE INCOME TAX CERTIFICATE INFORMATION

YEAR OF ASSESSMENT: 2021/2022   NAME OF CERTIFICATE: IRP5

EMPLOYEE INFORMATION
EMPLOYEE NUMBER: 81039755

INCOME TAX NO:
0181632159
DATE OF BIRTH
19/07/1979

CELL: 0782727288
BUS TEL: 012 404 4612
ID NUMBER:
7907190589088

SURNAME: JONES
NAMES: DANIEL

EMPLOYEE ADRESS
STREET NO: 1145 BLOCK U, SOSHANGUVE
TOWN: PRETORIA

EMPLOYER DETAILS
DEPARTMENT OF EDUCATION

INCOME RECEIVED.

R	463 277	BASIC INCOME
R	38 224	EXTRA INCOME

INCOME RECEIVED CONTINUE
GROSS EMPLOYEE INCOME
R   501 501

TAX CREDITS, EMPLOYER/EMPLOYEE CONTRIBUTION
SITE
R0
PAYE
R   86 154,12

DEDUCTIONS
R   34 745,78

TOTAL DEDUCTIONS
R   34 745,78

GROSS EMPLOYEE INCOME (TAXABLE)
R   466 755,22

EMPLOYER AND EMPLOYEE UIF CONTRIBUTION
R0
TOTAL TAX
R   **B**
MEDICAL TAX CREDIT
R   8 640,00
R0

[Adapted from actual tax document]

ANNEXURE C

QUESTION 4.1.3

TABLES 5 and 6: TAX TABLE AND TAX REBATES FOR THE 2021/2022 TAX YEAR.

TABLE 5: TAX RATES FOR 2021/22 TAX YEAR

TAX BRACKET	TAXABLE INCOME	TAX RATES (in R)
1	1–216 200	18% of the taxable income
2	216 201–337 800	38 916 + 26% of taxable income above 216 200
3	337 801–467 500	70 532 + 31% of taxable income above 337 800
4	467 501–613 600	110 739 + 36% of taxable income above 467 500
5	613 601–782 200	163 335 + 39% of taxable income above 613 600
6	782 201–1 656 600	229 089 + 41% of taxable income above 782 200
7	1 656 601 and above	587 593 + 45% of taxable income above 1 656 600

TABLE 6: TAX REBATES AND MEDICAL TAX CREDITS FOR 2021/22 TAX YEAR

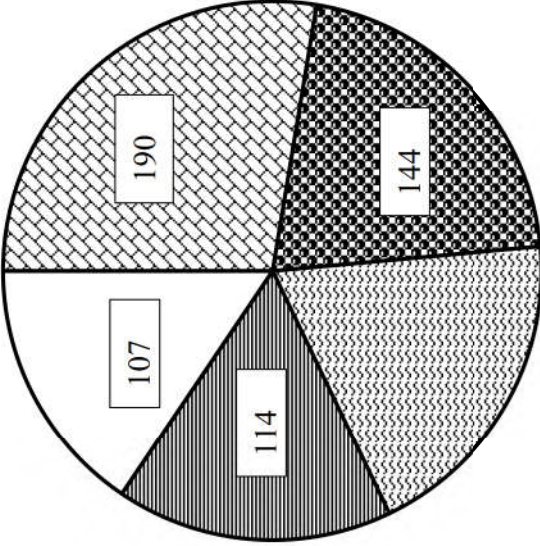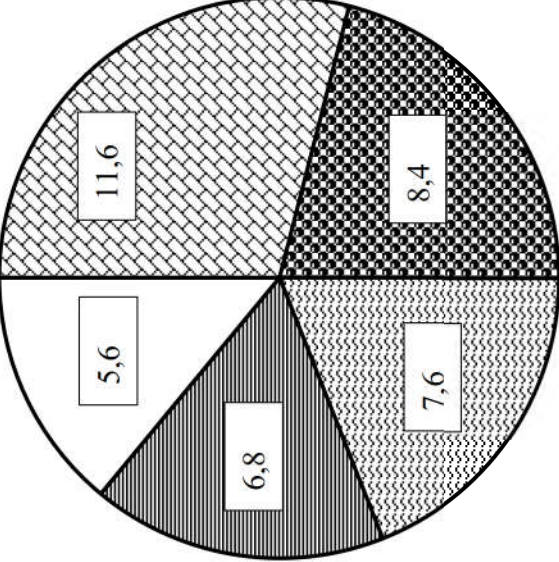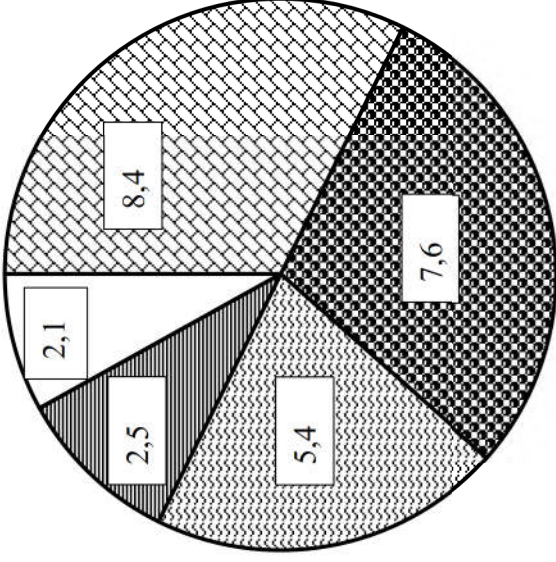| TAX REBATES	
Primary	R15 714
Secondary (65 and older)	R8 613
Tertiary (75 and older)	R2 871

[Source: www.statssa.gov.za]

ANNEXURE D

QUESTION 5.1

NET WORTH (IN BILLION DOLLARS) OF THE TOP FIVE RICHEST PERSONS IN THE WORLD, AFRICA AND SOUTH AFRICA

WORLD	AFRICA	SOUTH AFRICA
TOTAL NET WORTH $688 billion	TOTAL NET WORTH $40 billion	TOTAL NET WORTH $26 billion

education

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FREE STATE PROVINCE

PREPARATORY EXAMINATION/ *VOORBEREIDENDE EKSAMEN*

GRADE 12/*GRAAD 12*

MATHEMATICAL LITERACY P1/ *WISKUNDIGE GELETTERDHEID V1*

SEPTEMBER 2023

MARKING GUIDELINES/ *NASIENRIGLYNE*

MARKS/*PUNTE*: 150

Symbol/*Kode*	Explanation/*Verduideliking*
M	Method/*Metode*
MA	Method with accuracy/*Metode van akkuraatheid*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/graph/diagram/*Lees vanaf tabel/grafiek/diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in'n formule*
O	Opinion/Example/Definition/Explanation/*Opinie/Voorbeeld/Definisie/Verduideliking*
P	Penalty, e.g., for no units, incorrect rounding off, etc./*Penalisasie, bv. vir geen eenhede,verkeerde afronding ens.*
R	Rounding off/*Afronding*
NPR	No penalty for correct rounding/*Geen penalisering vir korek afronding nie*
NPU	No penalty for the units/*Geen penalisering vir eenhede nie*
AO	Answer only, if correct, full marks/*Slegs antwoord, indien korrek, volpunte*
MCA	Method with consistent accuracy/*Metode met volgehoue akkuraatheid*

These marking guidelines consist of 15 pages./
Hierdie nasienriglyne bestaan uit 15 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.
- General principle of marking, if the candidate makes one mistake, he loses one mark.

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 by die tweede berekeningsfout op.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart neem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.*

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
QUESTION/*VRAAG* 1 [31 MARKS/*PUNTE*]		**ANSWER ONLY = FULL MARKS**	
1.1.1	41150801599 $\checkmark\checkmark$RT	2RT correct number (2)	F L1 E
1.1.2	6/Six $\checkmark\checkmark$RT	2RT correct number (2)	F L1 M
1.1.3	$\checkmark\checkmark$A Value added tax/*Belastng op toegevoegde waarde.* **VAT only = 1 mark**	2A explanation (2)	F L1 E
*1.1.4	$\checkmark$MA $\checkmark$RT VAT/*BTW* = $\dfrac{15}{100}$ × R1 305,95 = R195,89	1RT correct value 1MA percentage calculation (2)	F L1 M
1.1.5	$\checkmark$A Tariff is the amount charged per kilolitres $\checkmark$A of water./*Tarief is die bedrag gehef per kiloliter water*	1A amount charged 1A per kilolitre (2)	F L1 D

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
*1.1.6	Amount charged/*Bedrag gehef* $\checkmark$RT $\checkmark$MA = 15 kℓ × R25,2300/kℓ = R378,45$\checkmark$CA	1RT correct values 1MA multiplying values 1CA simplification (3)	F L1 E
1.2.1	$\checkmark\checkmark$A Numerical/*Numeries*	2A correct classification (2)	D L1 M
1.2.2	42$^{\checkmark\checkmark}$A	2A correct identification (2)	D L1 E
1.2.3	$\checkmark$RT $\checkmark$A 42 ; 103 ; 104 ; 108 ; 110 ; 113 ; 117 ; 118 ; 118 ; 121 ; 124 ; 130	1RT all correct marks 1A ascending order (2)	D L1 E
1.2.4	$\checkmark\checkmark$RT December/*Desember* **OR** Month 12/ 12th Month/12^{fde} maand	2RT December (2)	D L1 M
1.2.5	$\checkmark\checkmark$A Inter-Quartile range/*Interkwartielvariasiewydte*	2A explanation (2)	D L1 E
1.3.1	$\checkmark\checkmark$A Two-way table/*Tweerigting tabel* **OR** $\checkmark\checkmark$A Contigency table.	2A correct answer (2)	P L1 M
1.3.2	**(i)** Yellow/*geel* $\checkmark\checkmark$A **(ii)** WR (White Red)$\checkmark\checkmark$A	2A correct option 2A correct outcome (4)	P L1 D E
1.3.3	6/Six$^{\checkmark\checkmark}$A	2A correct number (2)	P L1 E

QUESTION/*VRAAG* 2 [31 MARKS/*PUNTE*]			
Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.1.1	✓✓O **An Employee** is a person working/employed at the government departments and receives a salary./*'n Werknemer is 'n persoon wat werk/indiens is van die regeringsdepartemente en 'n salaris ontvang.* (2)	1O working for government 1O earning a salary	F L1 D
2.1.2	Total amount/*Totale bedrag* ✓RT = 19,7 + 92,4 + 2,3 + 6,1 + 183,2 + 61,2 + 100,1 + 14,8 + 2,5 + 8,4 + 3,5 + 6,6 + 10,3 + 1,3 + 0,4 + 0,2 + 2,6 + 5,4 + 1,8 ✓MA = 522,8 **OR/*OF*** Total amount/*Totale bedrag* ✓RT ✓MA = 1 581,4 − 627,3 − 251,0 − 173,3 − 7,0 = 522,8 (2)	1RT all correct amounts 1MA adding amounts 1RT all correct amounts 1MA subtracting amounts	F L1 M
2.1.3	✓✓O Basic education has more employees than other departments./*Basiese Onderwys het meer werknemers as die ander departemente* **OR/*OF*** ✓✓O Employees at basic education earn more than other employees./*Werknemers by Basiese Onderwys verdien meer as ander werknemers.* **OR/*OF*** ✓✓O Employees at basic education have higher educational qualifications than other departments./*Werknemers by Basiese Onderwys het hoër onderrig kwalifikasies as in ander departemente.* (2)	2O correct explanation	F L4 M

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
*2.1.4	Percentage expenditure/*Persentasie uitgawes* $= \dfrac{8,5 \overset{\checkmark RT}{} \overset{\checkmark MA}{}}{11,2} \times 100\%$ $= 75,9\% \overset{\checkmark CA}{}$ The department has a surplus$\overset{\checkmark O}{}$	1RT correct amount 1MA correct percentage calculation 1CA simplification 1O conclusion **NPR** (4)	F L3 M
2.1.5	Police: vans/bakkie/ cars/ combi/hippo$\overset{\checkmark\checkmark O}{}$ (casspirs)/nyala/horse/motorbike/bicycle/hoverboard/ balance scooter/boat/bus/helicopter/trucks *Polisievangwaens, motors, kombi, seekoei, nyala*	2O correct goods (2)	F L4 M
2.1.6	Capital spending/*kapitaal spandeer* 2018/19 $\overset{\checkmark RT}{}$ $= $ R78,9 billion/*miljard* $-$ R520 000 000 $\overset{\checkmark C}{} \quad \overset{\checkmark M}{}$ $= $ R78 900 000 000 $-$ R520 000 000 $= $ R78 380 000 000$\overset{\checkmark CA}{}$ **OR/*OF*** Capital spending/*kapitaal spandeer* 2018/19 $\overset{\checkmark RT}{}$ $= $ R78,9 billion/*miljard* $-$ R520 000 000 $\overset{\checkmark M}{} \quad \overset{\checkmark C}{}$ $= $ R78,9 billion/*miljard* $-$ R0,52 billion/*miljard* $= $ R78,38 billion/*miljard* $\overset{\checkmark CA}{}$	1RT correct amount 1C correct conversion 1M subtracting 1CA simplification 1RT correct amount 1C correct conversion 1M subtracting 1CA simplification (4)	F L3 M

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
2.1.7	Amount of interest/Rentebedrag Year/Jaar 1 R50 000 000 × $\dfrac{6,8}{100}$ ✓MA = R3 400 000 ✓A Total after year/totaal na jaar 1 = R50 000 000 + R3 400 000 = R53 400 000 ✓A 6 months/maande R53 400 000 × $\dfrac{6,8}{100}$ × $\dfrac{6}{12}$ ✓MA = R1 815 600 Final amount/finale bedrag = R53 400 000 + R1 815 600 = R55 215 600 ✓CA **OR/OF** Total after year/Totaal na jaar 1 = R50 000 000 × 1,068 ✓MA ✓MA = R53 400 000 ✓A Interest rate for 6 months/Rentekors na 6 maande 6,8% × $\dfrac{6}{12}$ = 3,4% ✓A Total after year 1 and 6 months/Totaal na jaar 1 en 6 maande = R53 400 000 × 1,068 = R55 215 600 ✓CA	1MA calculating 6,8% 1A interest year 1 1A amount end of year 1 1MA calculating 6 months 1CA final amount 1MA calculating 1,068 1MA multiplying by 1,068 1A amount end of year 1 1A calculating 3,4% 1CA final amount (5)	F L3 D

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.2.1	% change = $\dfrac{\text{new value} - \text{old value}}{\text{old value}} \times 100$ / $\checkmark$A % *verandering* = $\dfrac{\text{nuwe waarde} - \text{ou waarde}}{\text{ou waarde}} \times 100$ $= \dfrac{\overset{\checkmark SF}{\text{R10,00 - R7,50}}}{\text{R7,50} \checkmark SF} \times 100$ $= 33,3\% \checkmark CA$	1A correct formula 1SF numerator 1SF denominator 1CA simplification (4)	F L3 M
2.2.2	Withdrawal at own bank*Onttrekking by eie bank* $= \dfrac{\overset{\checkmark MA}{\text{R2000}}}{\text{R500}} \times \overset{\checkmark M}{\text{R10,00}}$ $= 4 \times \text{R10.00}$ $= \text{R40,00} \checkmark CA$ Withdrawal at point of sale $= \overset{\checkmark RT}{\text{R1,40}}$ Difference $= \text{R40,00} - \text{R1,40}$ $= \text{R38,60} \checkmark CA$ His statement is valid$\checkmark$O **OR** $= \dfrac{\text{R2000}\overset{\checkmark MA}{}}{\text{R100}} \times \overset{\checkmark M}{\text{R2,00}}$ $= 20 \times \text{R2,00}$ $= \text{R40,00} \checkmark CA$ Withdrawal at point of sale $= \overset{\checkmark RT}{\text{R1,40}}$ Difference $= \text{R40,00} - \text{R1,40}$ $= \text{R38,60} \checkmark CA$ His statement is valid$\checkmark$O	1MA dividing correct values 1M multiplying by R10,00 1CA simplification 1RT correct amount 1CA difference 1O conclusion 1MA dividing correct values 1M multiplying by R10,00 1CA simplification 1RT correct amount 1CA difference 1O conclusion (6)	F L4 M

QUESTION/*VRAAG* 3 [24 MARKS/*PUNTE*]

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.1.1	Questionnare/*vraelys* ✓✓O **OR** Survey/*opname* ✓✓O (2)	2O correct method	D L1 E
3.1.2	Total value/*totale waarde* $= \underset{✓RT}{2\ 199 + 394} \overset{✓MA}{163} + 40 + 213 + 32$ $= 3\ 041$ (2)	1RT all correct values 1MA adding	D L1 E
3.1.3	Number of home robbery/*aantal huisinbrake* ✓RT $= 449 \times 1\ 000$ ✓A $= 449\ 000$ **OR/*OF*** 449 thousand/*duisend* (2)	1RT reading from the table 1A correct number	D[L1 E
3.1.4	Mean home roberries 2018 - 2022 $= \dfrac{459 + 449 + 415 + 312 + 394\ ✓RT}{5\quad ✓MA}$ $= \dfrac{2029}{5}\ ✓S$ $= 405{,}8$ thousand/ 405 800 ✓CA (4)	1MA adding correct values 1M concept of mean 1S simplification 1CA correct mean **AO**	D L2 M
3.1.5	✓✓O The number of crimes was less than a thousand/ *Die aantal misdade was minder as duisend* **OR/*OF*** The number could not be rounded to the nearest 1 000/*Die getal kan nie afgerond word tot die naaste 1 000 nie* ✓✓O **OR/*OF*** ✓✓O No data/statistics not recorded / The crime was not reported/*Geen data/statistiek nie aangeteken/ Die misdaad is nie aangemeld nie* (2)	2O correct reason	D L4 D

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.2.1	Compound/Multiple/Quadruple/Grouped bar graph✓A ✓A Saamgestel/veelvuldig/viervoudig/gegroepeer/staafgrafiek✓A ✓A	1A type 1A bar graph (2)	D L1 E
3.2.2	Increase in percentage/ = 37,2% – 33,1% ✓RT ✓MA *Toename in persentasie* = 4,1%✓CA	1RT reading from graph 1MA subtracting values 1CA simplification **AO** (3)	D L2 E
3.2.3	Number of people in South Africa/*Aantal mense in Suid-Afrika* $= \frac{100}{4,8}$✓A $\times$ 2,85 million/*miljoen* ✓MA = 59,3749999999 million/*miljoen* = 59 400 000 ✓CA	1A correct percentage 1MA calculating a percentage 1CA simplification (3)	D L2 M
3.2.4	Range = Highest value – Lowest value ✓A *Omvang = hoogste waarde – laagste waarde* 7,7% = Highest value – 44,1% ✓SF Highest value = 44,1% + 7,7% ✓A = 51,8% ✓CA	1A correct formula 1SF correct substitution 1A changing the subject of the formula 1CA highest value (4)	D L3 M

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
QUESTION/VRAAG 4 [32 MARKS/PUNTE]			
4.1.1	IRP5 ✓✓A	2A correct name (2)	F L1 E
4.1.2	✓✓RT Twelve **OR** 12	2RT correct number (2)	F L2 E
*4.1.3	Annual tax/*Jaarlikse belasting* = ✓A R70 532 + 31% of taxable income above/*van belasbare inkomste bo* 337 800 ✓SF = R70 532 + 31% (R466 755,22 – R337 800) = R70 532 + (31% × R128 955,22) ✓CA = R70 532 + R39 976,12 = R110 508,12 ✓CA Tax payable/*Belasting betaalbaar* ✓M = R110 508,12 – R15 714 – R8 640 = R86 154,12 ✓CA	1A correct tax bracket 1SF correct substitution 1CA simplification 1CA tax before rebates 1M subtracting rebate and medical tax credits 1CA annual tax (6)	F L3 D
4.1.4	Medical tax credits/ *Mediese belastingkrediete* = R332 + R332 ✓RT = R664 × 12 ✓MA = R7 968 ✓CA ✓O His claim is valid/*sy bewering is geldig*	1RT correct tax credit 1MA multiplying by 12 1CA simplification 1O conclusion (4)	F L4 M

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.1.5	2021 salary = $= \dfrac{100^{\checkmark A}}{107,8} \times R499\ 413^{\checkmark MA}$ $= R463\ 277,37^{\checkmark CA}$ 2020 salary/*salaris* $= R463\ 277,37 - (R1\ 000 \times 12)^{\checkmark M}$ $= R451\ 277,37^{\checkmark CA}$ 2019 salary/*salaris* $= R451\ 277,37$	1A correct percentage 1MA calculating a percentage 1CA simplification 1M multiplying by 12 and subtracting 1CA 2019 salary	F L3 D
		(5)	
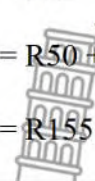
Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.2.1	✓✓O The data can be measured/*Die data kan gemeet word*	2O explanation (2)	D L1 D
4.2.2	September ✓RT November ✓RT	1RT September 1RT November (2)	D L1 M
*4.2.3	✓O As the interest rate increases, the monthly repayments also increase./✓O *Soos die rentekoers styg, neem die maandelikse terugbetalings ook toe*	1O interest rate increase 1O monthly repayments increase (2)	D L4 D
4.2.4	Difference in monthly repayments/*Verskil in maandelikse terugbetalings* ✓MA = R4 749,16 – R4 505,06 = R244,10 ✓CA ✓O His complaint is not valid/*sy klagte is nie geldig nie*	1MA subtracting values 1CA simplification 1O conclusion (3)	F L4 M

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.2.5	✓✓O The monthly instalment will be higher./ *Die maandlikse paaiement word hoër* **OR/OF** ✓✓O They might not afford the new monthly repayments./ *Hulle kan dalk nie die nuwe maandelikse terugbetalings bekostig nie* **OR/OF** ✓✓O They may have to reduce other expenses./ *Hulle sal dalk ander uitgawes moet verminder* **OR/OF** ✓✓O Sell their homes/Relocate to a smaller house./ *Verkoop hul huise/Verhuis na 'n kleiner huis* **OR/OF** ✓✓O Reduce their savings./ *Verminder hul spaargeld*	2O reason (2)	D L4 M
4.2.6	✓✓O It reduces the term of the loan./ *Dit verminder die termyn van die lening* **OR/OF** ✓✓O It reduces the interest amount to be paid./ *Dit verminder die bedrag betaalbaar*	2O reason (2)	D L4 M

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
QUESTION/*VRAAG* 5 [32 MARKS/*PUNTE*]			
5.1.1	688 000 000 000✓✓ A	2A correct answer $\qquad$ (2)	D L1 M
5.1.2	$\overset{\checkmark RT}{26 : 40} \overset{\checkmark A}{: 688}$ $\overset{\checkmark CA}{13 : 20 : 344}$	1RT correct values 1A correct order 1CA simplification $\qquad$ (3)	D L2 M
5.1.3	Net worth/*Netto waarde* $= \overset{\checkmark MA}{\$688} - \overset{\checkmark RT}{\$(190 + 144 + 114 + 107)}$ $= \$688 - \$555$ $= \$133 \overset{\checkmark CA}{\text{billion}}/\textit{miljard}$	1RT correct values 1MA subtracting from total 1CA simplification in billion dollars $\qquad$ (3)	D L2 M
5.1.4	Difference/*verskil* $= \overset{\checkmark RT}{\$11,6 \text{ billion}}/\textit{miljard} - \overset{\checkmark M}{\$8,4 \text{ billion}}/\textit{miljard}$ $= \$3,2 \text{ billion}/\textit{miljard} \overset{\checkmark CA}{}$	1RT correct values 1M subtracting 1CA simplification **NPU** $\qquad$ (3)	D L2 E
5.1.5	Amount in rands/ *Bedrag in rande* $= \dfrac{\overset{\checkmark MA}{\$5,4 \text{ billion}/\textit{miljard}}}{\$0,057} \times R1$ $= R94,737 \text{ billion}/\textit{miljard} \quad \overset{\checkmark A}{}$ $\approx R95 \overset{\checkmark A}{\text{ billion}}/\textit{miljard}/R95\ 000\ 000\ 000$	1MA dividing by exchange rate 1A simplification 1A correct rounding $\qquad$ (3)	F L2 M
5.2.1	$\overset{\checkmark\checkmark O}{}$ A Single trip is a trip taken by taxi to a particular destination without going back (i.e. no return)./ *'n Enkelrit is 'n rit wat per taxi na 'n spesifieke bestemming geneem word sonder om terug te gaan* **OR/*OF*** A Single trip is a trip taken by taxi from a pick-up point to a destination.✓✓O *'n Enkelrit is 'n rit wat per taxi vanaf die optelpunt tot eindpunt.*	2O explanation $\qquad$ (2)	F L1 E

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
5.2.2	$\overset{\checkmark A}{A = R50 + (10km - 3km) \times R15}$ $\overset{\checkmark MA}{= R50 + R105}$ $= R155^{\checkmark A}$	1A calculating number of km 1A adding fixed cost 1A value of A **AO** (3)	F L2 M
5.2.3	Total cost (in rands) per single trip/ *totale koste (in rand) per enkelrit* $= R50 + \overset{\checkmark MA}{(\text{number of km} - 3km)} \overset{\checkmark MA}{\times R15}$	1MA number of km minus 3 1MA multiplying and adding. (2)	F L2 D
5.2.4	Total distance/ *Totale afstand* $R1\,505 = R50 + \overset{\checkmark SF}{(\text{unknown dist.} - 3)} \times R15$ $\therefore \overset{\checkmark MA}{\text{Unknown dist.}} = (1\,455 \overset{\checkmark M}{\div 15}) + 3^{\checkmark M}$ $= 100\,km^{\checkmark CA}$ **OR** Total distance/ *Totale afstand* $= R1\,505 - R50^{\checkmark MA}$ $= R1\,455^{\checkmark A}$ $= \frac{R1\,455}{R15}\ ^{\checkmark M}$ $= 97\,km + 3\,km^{\checkmark M}$ $= 100\,km\ ^{\checkmark CA}$	1SF substituting into the formula 1MA changing the subject of the formula 1M dividing by cost per km 1M adding free km 1CA total distance 1MA subtracting fixed cost 1A cost 1M dividing by cost per km 1M adding free km 1CA total distance **NPU** (5)	F L2 M

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
5.2.5	Total cost for taxi waiting for /*totale koste van taxi wat wag vir* Doris = R305 $\checkmark$RT + R200 $\checkmark$MA = R505 $\checkmark$CA Total cost for Doris calling the taxi back/*Totale koste wanneer Doris die taxi laat terugkom* = R305 × 2 $\checkmark$M = R610 $\checkmark$CA Her claim is not valid/*Haar bewering is nie geldig nie* $\checkmark$O	1RT cost for 20km 1MA adding return trip 1CA total cost 1M multiplying by 2 1CA total cost 1O conclusion	F L4 M
		(6)	

TOTAL/*TOTAAL*: 150

NOTES	
1.1.4	VAT INCL/BTW = $\frac{115}{100}$ $\checkmark$MA $\times$ R1 305,95 = R1 501,84 $\checkmark$M VAT/BTW = R1 501,84 – R1 305,95 = R195,89
1.1.6	R1 305,95 – R57,96 – R204,48 – R665,056 = R378,45 $\checkmark$CA 1 mark only
2.1.4	$\checkmark$RT Difference = 11,2 – 8,5 = 2,7 % difference = $\frac{2,7}{11,2}$ $\times$ 100 = 24,10 $\checkmark$CA $\checkmark$O The department has a surplus
4.1.3	**ACCEPT** Annual tax/*Jaarlikse belasting* = $\checkmark$A R70 532 + 31% of taxable income above/*van belasbare inkomste bo* 337 800 $\checkmark$SF = R70 532 + 31% (R466 755,22 – R337 800) = R70 532 + (31% $\times$ R128 955,22) $\checkmark$CA = R70 532 + R39 976,12 = R110 508,12 $\checkmark$CA Tax payable/*Belasting betaalbaar* $\checkmark$M = R110 508,12 – R15 714 – **R7 968** = R86 826,12 $\checkmark$CA

4.2.3	**ACCEPT**

✓O   ✓O

As the months increase, the interest rate also increases./
Soos die maande toeneem, styg die rentekoers ook

OR

✓O   ✓O

As the months increase, the monthly repayments also increase./
Soos die maande toeneem, neem die maandelikse terugbetalings ook toe

QUESTION 3 of ENGLISH VERSION		QUESTION 4 of AFRIKAANS VERSION	
Marks	**Score for candidate**	**Marks**	**Score for candidate**
1	1	1	1
2	2	2	2
3	4	3	4
4	5	4	5
5	6	5	6
6	7	6	7
7	8	7	8
8	10	8	10
9	11	9	11
10	12	10	12
11	13	11	13
12	14	12	14
13	16	13	15
14	17	14	17
15	18	15	18
16	19	16	19
17	20	17	20
18	22	18	21
19	23	19	23
20	24	20	24
		21	25
		22	26
		23	27
		24	29
		25	30
		26	31
		27	32

Question 3.2.4
MUST NOT BE MARKED FOR ENGLISH

Question 4.1.5
MUST NOT BE MARKED FOR ENGLISH