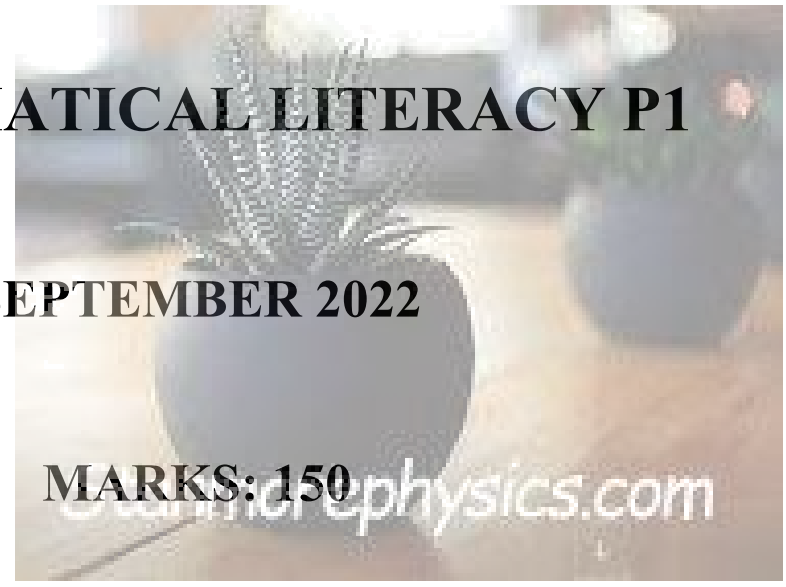
education

Department of Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION

GRADE 12



MATHEMATICAL LITERACY P1

SEPTEMBER 2022

MARKS: 150

TIME: 3 HOURS

This question paper consists of 14 pages,
1 answer sheet and an addendum with 3 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 3.1
   - ANNEXURE C for QUESTION 3.2

3. Answer QUESTION 5.3.4 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. Number the answers correctly according to the numbering system used in this question paper.

5. Start EACH question on a NEW page.

6. An approved calculator (non-programmable and non-graphical) may be used unless stated otherwise.

7. Show ALL calculations clearly.

8. Round off ALL final answers appropriately according to the given context, unless stated otherwise.

9. Indicate units of measurement, where applicable.

10. Pictures and diagrams are NOT necessarily drawn to scale unless stated otherwise.

11. Write neatly and legibly.

QUESTION 1

1.1 TABLE 1 below shows the fees charged at Marie Secondary School.

TABLE 1: SCHOOL AND HOSTEL FEES FOR 2020

Account holder
Katleho Titus

Account for the year is payable on 1 February. Arrangement for quarterly or monthly (over 11 months) payments can be made.

School Fees

Date	Description	Debit	Credit
01/01/2020	Balance brought forward		R32,55
06/01/2020	School fees 2020	R12 540,00	
13/01/2020	EFT bank deposit		R3 135,00
03/04/2020	EFT bank deposit		R3 135,00
10/07/2020	EFT bank deposit		R3 135,00
30/10/2020	EFT bank deposit		R3 135,00

Hostel Fees

Date	Description	Debit	Credit
01/01/2020	Balance brought forward		R00,00
06/01/2020	Hostel fees 2020	R20 350,00	
13/01/2020	EFT bank deposit		R5 100,00
03/04/2020	Hostel cancelled		R15 250,00
01/12/2020	Total due		R00,00

[Adapted from actual school statement]

Use TABLE 1 above to answer the questions that follow.

1.1.1 Explain the meaning of the term *debit* in this context. (2)

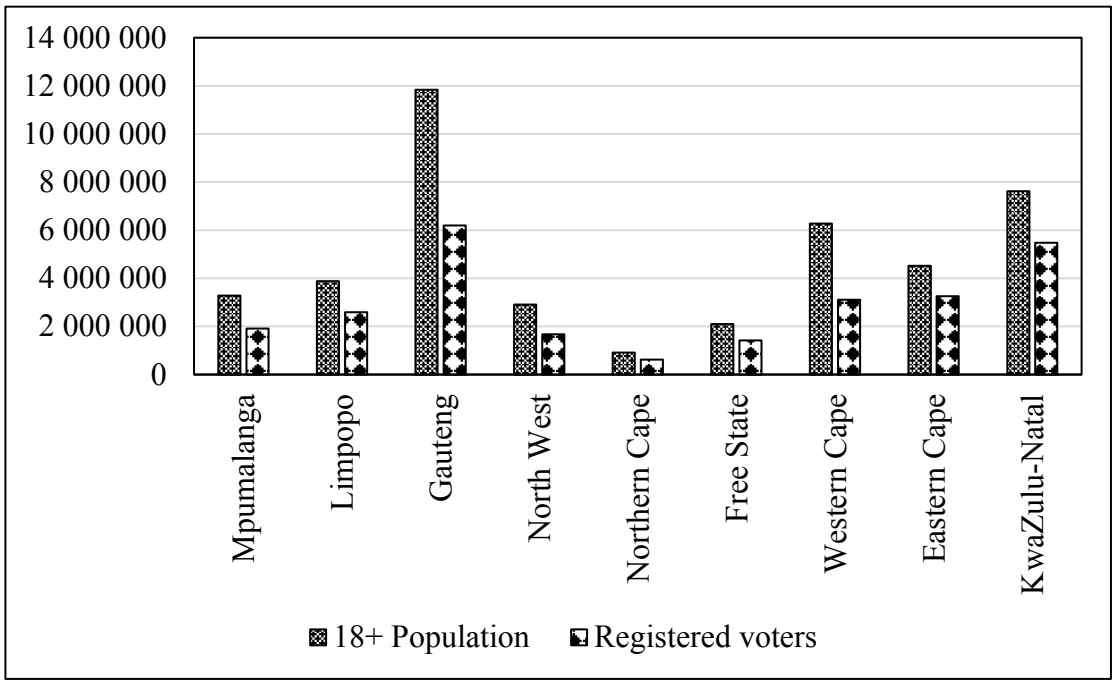
1.1.2 Write down the frequency of the school fee payments. (2)

1.1.3 Identify a descriptor that indicates Katleho did not stay at home during the first three months of 2020. (2)

1.1.4 Determine the school fee amount to be paid if the monthly payment option was used. (3)

1.1.5 Calculate the total amount paid for school and hostel fees in 2020. (3)

1.2 The graph below indicates the number of registered voters per province for the 2021 municipal elections.



[Source:elections.org.za]

Use the graph above to answer the questions that follow.

1.2.1 Identify the type of graph drawn. (2)

1.2.2 Write down the minimum age required for voting. (2)

1.2.3 Determine the probability of randomly selecting a province where the number of registered voters is higher than the voting population. (2)

1.2.4 Express the number 5 471 539 in words. (2)

1.2.5 Write down the number of provinces taking part in the municipal elections. (2)

1.3 Buying a cell phone is sometimes not easy as one has to compare the storage capacities and the price.

The information below indicates the prices charged for different storage capacities of the same brand of cell phone.

Capacity	Cash price
256 GB	R25 899
128 GB	R23 699
512 GB	R30 899
1 TB	R35 299

NOTE: GB stands for gigabyte
TB stands for terabyte
1000 GB = 1TB

Study the information above to answer the questions that follow.

1.3.1 Write down the cash price of a cell phone with the lowest capacity. (2)

1.3.2 Arrange the cell phone capacity in descending order. (2)

1.3.3 Determine the price difference between a 512 GB and a 256 GB cell phone. (2)

1.3.4 Round R23 699 to the nearest thousand rands. (2)
[30]

QUESTION 2

2.1 South Africans employ just over one million domestic workers across the country. In 2019 the National Minimum Wage was introduced, which stated that domestic workers must be paid at least a minimum of R15,00 an hour.

Tables 2 and 3 on ANNEXURE A, illustrate the scenario for one month, for three domestic workers, after the introduction of the National Minimum Wage.

Use TABLES 2 and 3 on ANNEXURE A and the above information to answer the questions that follow.

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

2.1.2 State whether the domestic workers have a surplus or a deficit. (2)

2.1.3 Calculate the missing values **A** and **B**. (3)

2.1.4 Show with calculations that Domestic worker 1 budgets 77% more for food than electricity. (5)

2.1.5 Determine the probability (as a common fraction) of not selecting a domestic worker who worked more than 20 days. (2)

2.1.6 Provide TWO possible reasons why all the workers spend the same amount on food. (4)

2.1.7 Domestic worker 2 claimed that if the National Minimum Wage can increase to R27,00 per hour, there can be money left after paying all the expenses.

Verify, showing all calculations, whether the claim is valid. (5)

2.2 During a particular month, Domestic worker 1's employer, Debbie, used 25 kℓ of water.

TABLE 4 shows the residential water tariffs, including VAT.

TABLE 4: RESIDENTIAL WATER TARIFFS INCLUDING VAT

Block	**Tariff in kilolitres (kℓ)**	**Tariff in Rands per kilolitre (kℓ)**
Block 1	0–6 kℓ	R10,34
Block 2	7–15 kℓ	R24,54
Block 3	16–30 kℓ	R27,63
Block 4	31–60 kℓ	R33,10
Block 5	61 or more kℓ	R38,91

[Source: Mangaung.co.za]

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

2.2.1 What does the acronym *VAT* stand for? (2)

2.2.2 Determine the maximum number of kℓ that can be charged in Block 2. (2)

2.2.3 Calculate the amount that Debbie will pay for the water used. (5)

2.3 Debbie wants to buy a water purifying system for her drinking water. The following options are available for her.

PAYMENT OPTIONS	PICTURE OF A WATER PURIFYING SYSTEM
Option 1: The cash price is R2 299 **Option 2:** • R216 per month • The amount includes insurance and service fee • 24 months to pay • Interest 17,25% p.a. **Option 3:** • R211 per month • Amount excludes insurance and service fee • 12 months • Interest 17,5% p.a.	

[Source: www.takealot.com]

Use the information above to answer the questions that follow.

2.3.1 Write the acronym *p.a.* in full. (2)

2.3.2 Calculate the amount of interest p.a. charged in option 3. (3)

2.3.3 Debbie told her domestic worker that she would pay more than double the cash price if she chose to buy using option 2.

Verify, showing all calculations, if Debbie's statement is correct. (5)
[42]

QUESTION 3

3.1 Agriculture plays a crucial role in food security by supplying the basic food products to keep millions of people fed every day. In South Africa, the industry produces various products, from beef and poultry to maize, fruits, and vegetables.

TABLE 5 on ANNEXURE B shows the commercial farming land per province in South Africa in 2017.

Use TABLE 5 on ANNEXURE B to answer the questions that follow.

3.1.1 State why the data for the farming land is regarded as continuous. (2)

3.1.2 Write down the province with the largest grazing land. (2)

3.1.3 The mean number of farmworkers in South Africa in 2017 was 84 180,33. Hence determine **A**, the number of farmworkers in the Free State in 2017. (4)

3.1.4 Calculate the value of **B**. (3)

3.1.5 A farmer stated that in Western Cape, there are 27 farmworkers for every farm and that in Gauteng, there are 16 farm workers for every farm.

Determine, using unit ratios, whether the statement is correct. (6)

3.1.6 Determine the range of the arable land. (3)

3.2 The pie chart on ANNEXURE C shows the types and percentages of the livestock population (in %) in South Africa in November 2019.

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

3.2.1 Calculate the actual number of the buffalo population. (4)

3.2.2 Give an example of livestock that can be classified as OTHER. (2)

3.2.3 Determine the probability (as a decimal) of randomly selecting beef cattle from the percentage cattle livestock population. (3)

3.2.4 There was an increase of 15,7% in the total livestock population between November 2019 and November 2020.

Calculate the total livestock population in November 2020. (3)

[32]

QUESTION 4

4.1 Many South Africans use the weekly advertising in the local newspapers to help with shopping decisions.

TABLE 6 below indicates the number of copies distributed and average monthly household income around some areas in Pretoria.

TABLE 6: NUMBER OF COPIES DISTRIBUTED AND AVERAGE MONTHLY HOUSEHOLD INCOME

Area	Number of distributed copies	Average readership in %	Average monthly household income in Rands (R)
Pretoria East	79 210	76	30 685
Centurion	60 350	61	24 695
Pretoria North	40 100	62	28 435
Moot	33 630	76	20 330
Pretoria West	20 250	70	20 250
Pretoria Far North	29 000	80	14 660
Mamelodi	30 000	76	16 360

[Source: rekord.co.za]

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

4.1.1 State the frequency of receiving this newspaper in Pretoria. (2)

4.1.2 Write down the mode for the average readership. (2)

4.1.3 Determine the interquartile range (IQR) for the average monthly household income in Pretoria.

You may use the formula: **IQR = Q3 – Q1** (5)

4.2 The cost for a quarter of a page to advertise in a local newspaper in the United Kingdom (UK) is £250.

The exchange rate between the South African rand and the United Kingdom pound on 15 November 2021 is given below:

SOUTH AFRICAN RAND (ZAR)	UNITED KINGDOM POUND STERLING (£)
20,38	1
1	0,049

[Source: www.xe.com]

Use the information above to answer the questions that follow.

4.2.1 Write down the exchange rate of the South African rand to the UK pound in the form:
R1 = … (2)

4.2.2 Determine (in rands) the price for advertising in a local newspaper. (3)

4.3 Mr Malinga, a 52-year-old resident at Pretoria North, earned a monthly taxable income of R35 357,00 during the 2021/22 tax year. During this time, Mr Malinga was a member of a medical fund for himself, his wife and his two children.

Table 7 below shows the tax table for the 2021/22 tax year.

TABLE 7: 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

[Adapted from www.sars.gov.za]

Table 8 below shows the tax rebates and medical tax credits for the 2021/22 tax year.

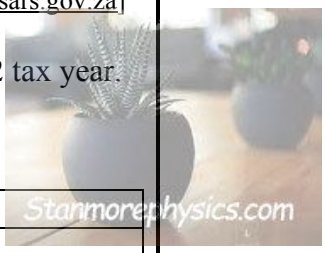


TABLE 8: TAX REBATES AND MEDICAL TAX CREDITS FOR 2021/22 TAX YEAR

TAX REBATES	
Primary	R15 714
Secondary (65 and older)	R8 613
Tertiary (75 and older)	R2 871
MEDICAL TAX CREDITS PER MONTH	
Main member	R332
First member	R332
Each additional member	R224

[Adapted from www.sars.gov.za]

Use TABLES 7 and 8 above to answer the question that follow.

4.3.1 Determine Mr Malinga's annual taxable income. (2)

4.3.2 Show with calculations that Mr Malinga will receive R13 344 medical tax credits for the 2021/22 tax year. (4)

4.3.3 Calculate the amount of tax Mr Malinga must pay for 2021/22 tax year. (6)

[26]

QUESTION 5

Mogodu Monday has become a popular South African weekly occasion wherein many celebrate the most unpopular day of the week by turning it into an enjoyable time over great food with family and friends. During this day, mogodu is often enjoyed with a side of warm pap, samp or dumpling.

A small business sells a plate of mogodu for R50,00.

NOTE WELL	PLATE OF MOGODU SERVED WITH PAP
Mogodu is a combination of chopped tripe and intestines served as a stew. **Pap** is a traditional porridge made from maize meal.	

The cost to make one plate of mogodu is given by the following formula:

Total cost = R1 200 + 26 m where m = number of plates

[Adapted from #ReMojaKaofela@MojaCafe]

Use the information above to answer the questions that follow.

5.1 Use the equation above to determine the number of plates sold if the total cost is R2 760. (4)

5.2 Construct a formula that can be used to calculate the income from selling mogodu, in the form:

Income = … (2)

5.3 TABLE 9 below shows the total cost and income from selling plates of mogodu.

TABLE 9: COST AND INCOME OF SELLING PLATES OF MOGODU

Number of plates	**0**	**10**	**30**	**50**	**70**	**90**	**100**
Cost (R)	1 200	1 460	1 980	2 500	3 020	3 540	3 800
Income (R)	0	500	1 500	2 500	3 500	4 500	5 000

5.3.1 Explain the term *break even* in this context and identify the number of plates that must be sold to break even. (3)

5.3.2 The manager of the small business stated that she could make a $\frac{8}{25}$ profit on 100 plates of mogodu sold.

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

5.3.3 Write down the type of graph that can be used to represent the information on TABLE 9 above. (2)

5.3.4 The income graph has already been drawn on the attached ANSWER SHEET.

Use the information from Table 9 to draw on the same set of axes a graph representing the cost of plates of mogodu. (3)
[20]

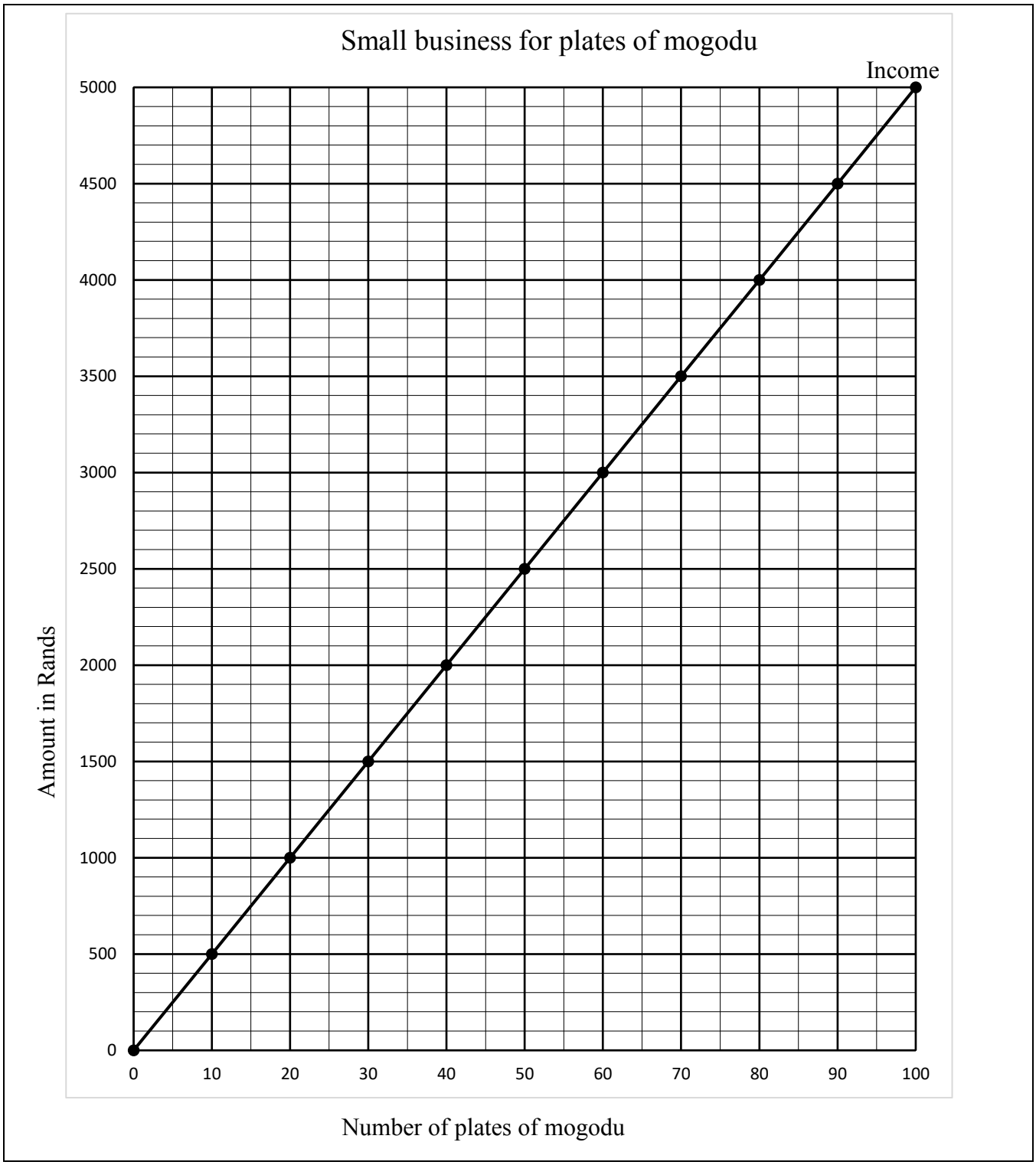
TOTAL: 150

Grade 12 Prep. Exam.

ANSWER SHEET

QUESTION 5.3.4

NAME AND SURNAME:_____



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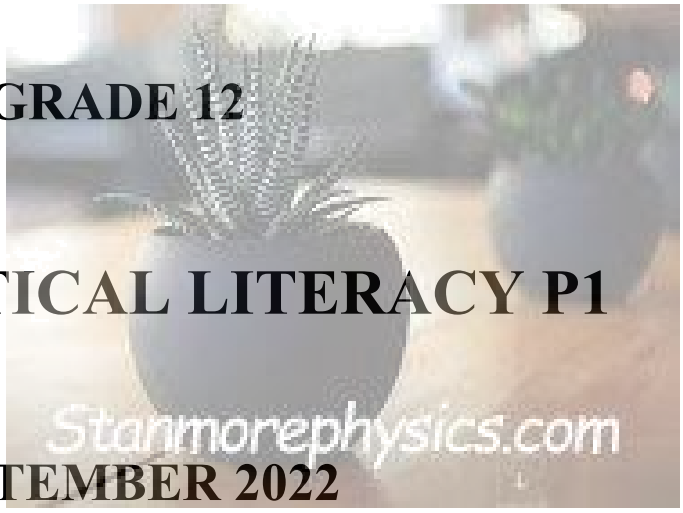


GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2022

MARKS: 150

ADDENDUM

This addendum consists of 4 pages with 3 annexures.

ANNEXURE A

QUESTION 2.1

TABLE 2: INCOME OF DOMESTIC WORKERS

Income	**Domestic worker 1**	**Domestic worker 2**	**Domestic worker 3**
Number of days worked	21	15	15
Number of hours worked per day	8	8	5
Income	**R2 520**	**R1 800**	**R1 125**

TABLE 3: EXPENDITURES OF DOMESTIC WORKERS

	Domestic worker 1		**Domestic worker 2**		**Domestic worker 3**	
Household expenses		% of income		% of income		% of income
Transport to work (return trip)	R1 092,00	43,3%	R780,00	43,3%	R780,00	69,3%
Prepaid electricity (350kWh)	R529,34	21,0%	**A**	29,4%	R529,34	47,1%
Total for transport + electricity	R1 621,34	64,3%	R1 309,34	72,7%	R1 309,34	116,4%
Money remaining for other expenses	R898,66		R490,66		**B**	
Food for 4 people	R2 473,75		R2 473,75		R2 473,75	
Surplus/deficit	-R1 575,09	-63,7%	-R1 983,09	-80,2%	-R2 658,09	-107,5%

[Source:businesstech.co.za]

ANNEXURE B

QUESTION 3.1

TABLE 5: COMMERCIAL FARMING LAND IN HECTARES AND PERCENTAGE PER PROVINCE IN 2017

Province	Number of farms	Number of farm workers	Total Farming land		Grazing land		Arable land		Other land	
			Hectares	%	Hectares	%	Hectares	%	Hectares	%
Western Cape	6 937	186 997	4 098 779	8,8	2 738 371	7,5	1 003 642	13,2	356 765	15,7
Eastern Cape	4 214	65 151	5 713 528	12,3	5 266 438	14,4	357 810	4,7	89 278	3,9
Northern Cape	4 829	69 070	17 229 260	37,1	16 358 215	44,8	671 400	8,8	199 643	8,8
Free State	7 951	**A**	7 636 020	16,4	5 161 833	14,1	2 454 122	32,2	20 062	0,9
KwaZulu-Natal	3 103	96 206	1 843 926	4,0	917 312	2,5	524 053	6,9	402 559	**B**
Northwest	4 920	57 758	5 323 682	11,5	3 474 878	9,5	1 118 509	14,7	730 294	32,2
Gauteng	2 291	36 517	385 317	0,8	197 878	0,5	180 349	2,4	7 088	0,3
Mpumalanga	2 823	73 318	2 467 007	5,3	1 177 535	3,2	943 163	12,4	346 307	15,3
Limpopo	3 054	97 478	1 722 938	3,7	1 244 477	3,4	361 341	4,7	117 119	5,2
South Africa	**40 122**	**…**	**46 420 458**	**100**	**36 536 940**	**100**	**7 614 392**	**100**	**2 269 115**	**100**

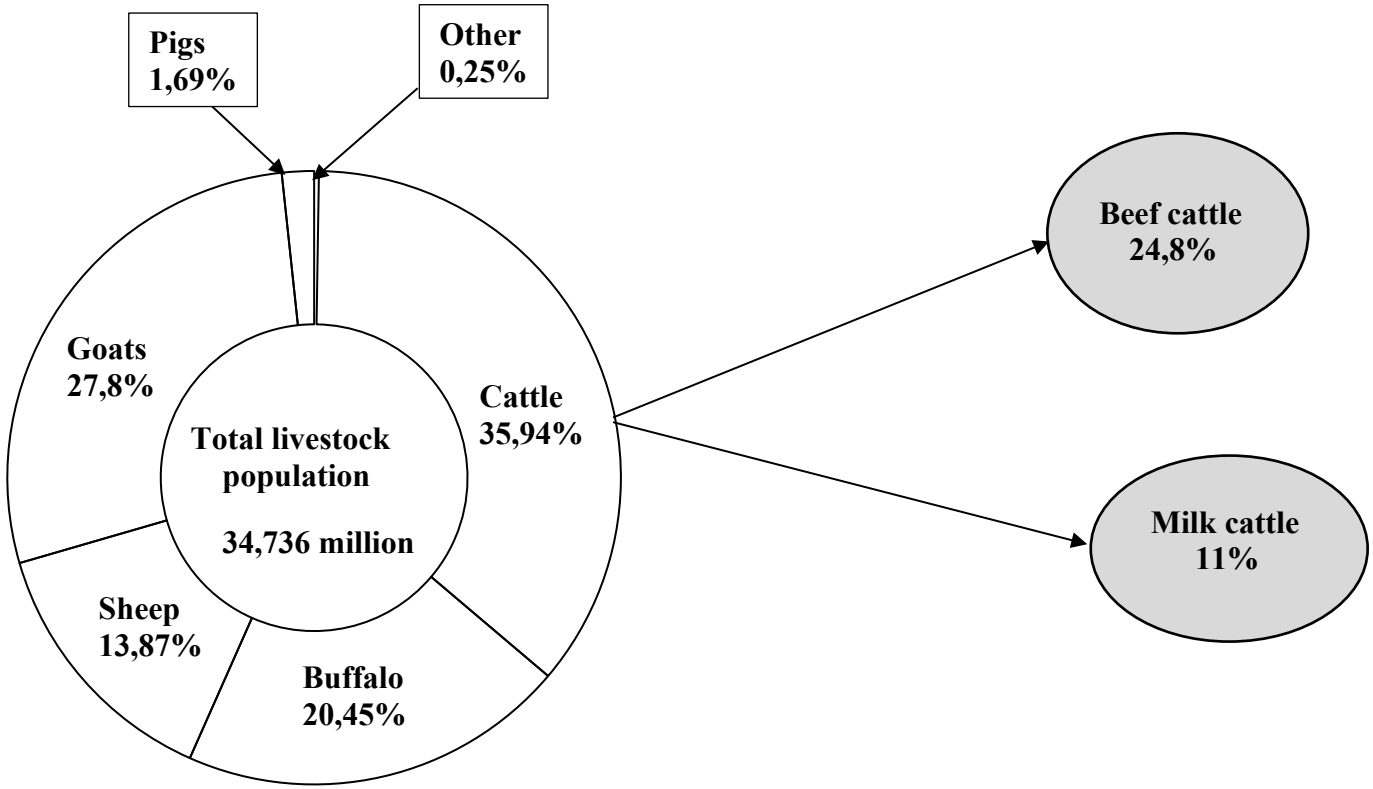
[Source: www.statista.com]

NOTE: **Grazing land** is used for livestock and game farming, and **Arable land** is used for crop production.

ANNEXURE C

QUESTION 3.2

LIVESTOCK POPULATION (IN %) IN SOUTH AFRICA IN NOVEMBER 2019.



NB: Livestock is the domesticated animals raised in an agricultural setting/farm to produce commodities such as meat, eggs, milk, fur, leather, etc.

[Source: www.dalrrd.gov.za]

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PREPARATORY EXAMINATION/
VOORBEREIDENDE EKSAMEN

GRADE 12/*GRAAD 12*

MATHEMATICAL LITERACY P1/
WISKUNDIGE GELETTERDHEID V1

SEPTEMBER 2022

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/A*fronding*
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 consists of 13 pages./
Hierdie nasienriglyne bestaan uit 13 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.*

QUESTION/*VRAAG* 1 [30 MARKS/*PUNTE*]		**ANSWER ONLY = FULL MARKS**	
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
1.1.1	**Debit** is the amount charged for school fees/ ✓✓O **Debit** is the amount charged for hostel fees ***Debiet*** *is die bedrag gehef vir skoolfooie/* ***Debiet*** *is die bedrag gehef vir koshuisfooie*	2O correct explanation (2)	F L1
1.1.2	Quarterly ✓✓A *Kwartaalliks*	2A correct answer (2)	F L1
1.1.3	Hostel fees ✓✓A *Koshuisfooi*	2RT correct descriptor (2)	F L1
1.1.4	Monthly payment = $\frac{\text{R12 540}}{11}$ ✓A ✓A *Maandelikse betaling* = R1 140 ✓CA	1A numerator 1A denominator 1CA monthly payment **NPU** (3)	F L1
1.1.5	Total amount = R12 540 + R5 100 ✓M ✓RT *Totale bedrag* = R17 640 ✓CA	1RT correct amounts 1M adding amounts 1CA simplification **NPU** (3)	F L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
1.2.1	✓A ✓A Compound bar graph *Saamgestelde staafgrafiek*	1A compound 1A bar (2)	D L1
1.2.2	✓✓A 18 years OR/OF 18 ✓✓A *18 jaar*	2A correct age NP for omitting years (2)	D L1
1.2.3	✓✓A Impossible/ 0/ 0% *Onmoontlik*	2A probability (2)	P L1
1.2.4	Five million four hundred and seventy-one thousand five hundred and thirty-nine ✓✓A *Vyfmiljoen vierhonderd een en sewentigduisend vyfhonderd nege en dertig*	2A number in words (2)	D L1
1.2.5	9✓✓A	2A correct number (2)	D L1
1.3.1	R23 699✓✓A	2A correct answer (2)	F L1
1.3.2	1 TB 512 GB 256 GB 128 GB ✓✓MA	2A correct values in the correct order (2)	D L1
1.3.3	✓MA Difference = R30 899 – R25 899 *Verskil* = R5 000✓CA	1MA subtracting correct amounts 1CA correct number of litres (2)	F L1
1.3.4	R24 000✓✓A	2R rounding **NPU** (2)	F L1

QUESTION/*VRAAG* 2 [42 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1.1	**Income** is the amount earned for the domestic work done. ✓✓O ***Inkomste*** *is die bedrag verdien vir huiswerk wat gedoen is.*	2O explanation (2)	F L1
2.1.2	Deficit/*Tekort* ✓✓O	2O explanation (2)	F L1
2.1.3	**A** = $\frac{29,4}{100}$ × R1 800 ✓MA = R529,20 ✓CA **B** = R1 125 – R1 309,34 = - R184,34 ✓CA	1MA calculating percentage 1CA value of A 1CA value of B (3)	F L3
2.1.4	✓RT Food % = $\frac{R2\,473,75}{R2\,520}$ × 100 ✓M *Voedsel* = 98 % ✓CA Difference = 98% – 21,0% ✓M *Verskil* = 77% ✓CA	1RT correct values 1M calculating percentage 1CA simplification 1M subtracting values 1CA simplification (5)	F L3
2.1.5	Probability = $\frac{2}{3}$ ✓A ✓A *Waarskynlikheid*	1A numerator 1A denominator (2)	P L2
2.1.6	They buy the same food items ✓✓O *Hulle koop dieselfde voedselitems* **OR/*OF*** They buy from the same shop ✓✓O *Hulle koop by dieselfde winkel* **OR/*OF*** The food is for four people ✓✓O *Die voedsel is vir vier persone* **OR/*OF*** They have same size family ✓✓O *Hulle families is dieselfde grootte*	2O opinion 1 2O opinion 2 (4)	F L4

2.1.7	Income = R27,00 × 8 × 15 ✓M *Inkomste* = R3 240 ✓CA Remaining money after expenses/ *Oorblywende geld na uitgawes* R3 240 − R1 309,34 − R2 473,75 ✓RT = -R543,09 ✓CA Her claim is not valid ✓O *Haar eis is nie geldig nie*	1RT correct values 1M multiplying values 1CA income 1CA difference 1O conclusion (5)	F L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.2.1	Value added tax ✓✓O *Belasting op toegevoegde waarde*	2O explanation (2)	F L1
2.2.2	9 kℓ ✓✓A	2A correct answer (2)	F L1
2.2.3	First 6 kℓ = 6 × R10,34 ✓MA *Eerste* = R62,04 ✓A Second 9 kℓ = 9 × R24,54 *Tweede* = R220,86 ✓CA Last 10 kℓ = 10 × R27,63 *Laaste* = R276,30 Total amount = R62,04 + R220,86 + R276,30 ✓M *Totale bedrag* = R559,20 ✓CA	**CA from Question 2.2.2** 1MA multiplying values 1A amount for first 6 kℓ 1CA amount for 9 kℓ 1M adding three values 1CA total amount (5)	F L3
2.3.1	Per annum ✓✓O *Per jaar*	2O explanation (2)	F L1
2.3.2	Interest = $\frac{17,5}{100}$ ✓A × R2 299 ✓MA *Rente* = R402,33 ✓CA	1A correct percentage 1MA calculating percentage 1CA simplification (3)	F L2
2.3.3	Option 2 = R216 × 24 ✓MA *Opinie 2* = R5 184 ✓A Difference = R5 184 − R2 299 ✓MCA *Verskil* = R2 885 ✓CA She is correct ✓O *Sy is reg*	1MA multiplying values 1A simplification 1MCA subtracting values 1CA 1O conclusion (5)	F L4

QUESTION/*VRAAG* 3 [32 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
3.1.1	✓✓O The data is measured and can include decimals. *Die data word gemeet en kan desimale insluit*	2O correct reason (2)	D L1
3.1.2	Northern Cape/*Noord-Kaap* ✓✓RT	2RT correct province (2)	D L1
3.1.3	✓MA 84 180,33 = (186 997 + 65 151 + 69 070 + **A** + 96 206 + 57 758 + 36 517 + 73 318 + 97 478)/9 ✓M 84 180,33 × 9 = 682 495 + **A** 757 622,97 = 682 495 + **A** ✓M **A** = 757 622,97 − 682 495 = 75 127,97 = 75 128✓CA	1MA mean concept 1M multiplying by 9 1M subtracting 1CA rounded value of **A** (4)	D L2
3.1.4	✓RT **B** = $\frac{402\ 559}{2\ 269\ 115}$ × 100 ✓M = 17,7% ✓CA **OR/OF** ✓M ✓RT **B** = 100−15,7−3,9−8,8−0,9−32,2−0,3−15,3−5,2 = 17,7% ✓CA	1RT correct values 1M calculating percentage 1CA simplification 1RT correct values 1M subtracting from 100 1CA simplification **AO** (3)	D L2

3.1.5	Western Cape/*Wes-Kaap* ✓RT ✓M 6 937: 186 997 1: 27 ✓CA Gauteng 2 291: 36 517 ✓M 1:16 ✓CA She is correct ✓O *Sy is reg*	1RT correct values 1M correct order 1CA simplification 1M correct values in the correct order 1CA simplification 1O conclusion (6)	D L4
3.1.6	Range = 2 454 122 − 180 349 ✓RT ✓M *Waardeversameling* = 2 273 773 ✓CA	1RT correct values 1M subtracting values 1CA simplification **AO** (3)	D L2
3.2.1	Buffalo population = $\frac{20,45}{100}$ × 34,736 million ✓RT ✓M *Buffelbevolking* ✓CA ✓U = 7,104 million **OR/*OF*** Buffalo population = $\frac{20,45}{100}$ × 34 736 000 ✓RT ✓M ✓M *Buffelbevolking* = 7 103 512 ✓CA	1RT correct percentage 1M multiplying by correct number 1CA simplification 1U writing million 1RT correct percentage 1M writing the number in full 1M multiplying by correct amount 1CA simplification **AO** (4)	D L2
3.2.2	Chicken/horses/donkeys/camels/ducks ✓✓O *Hoenders/perde/donkies/kamele/eende* **Any other relevant livestock/** **Enige relevante lewendehawe**	2O valid example (2)	D L1
3.2.3	Probability = $\frac{24,8\%}{35,94\%}$ ✓A ✓A *Waarskynlikheid* = 0,69 ✓CA	1A numerator 1A denominator 1CA simplification **NPR** **AO** (3)	P L2

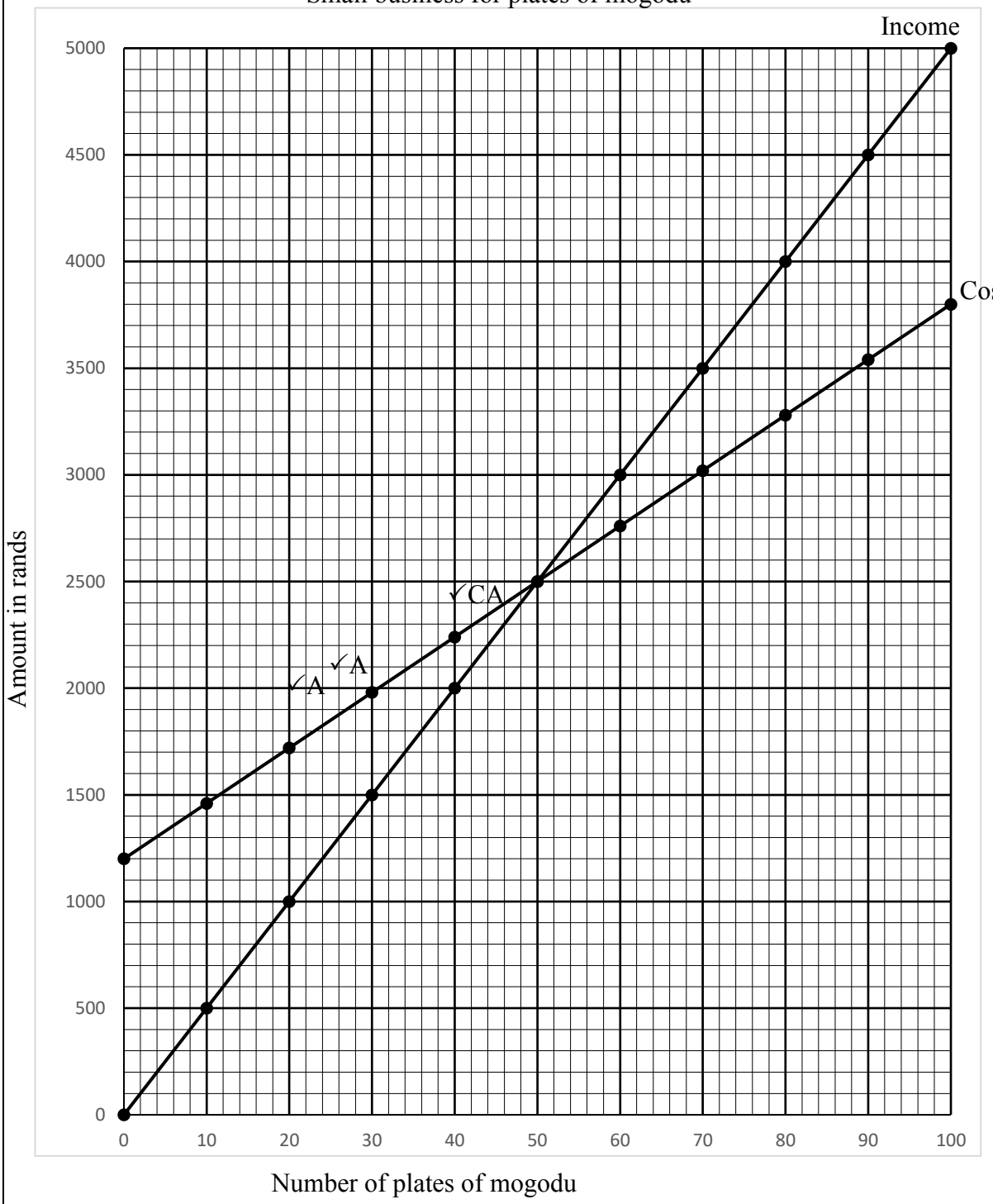
Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.2.4	New population $= \frac{15,7}{100} \times 34,736$ million ✓MA *Nuwe bevolking* $= 5,454$ million ✓CA $\therefore (34,736 + 5,454)$ million $= 40,190$ million ✓CA **OR/*OF*** New population $= \frac{15,7}{100} \times 34\ 736\ 000$ ✓MA *Nuwe bevolking* ✓CA $= 5\ 453\ 552$ $\therefore 34\ 736\ 000 + 5\ 453\ 552$ $= 40\ 189\ 552$ ✓CA **OR/*OF*** New population $= \frac{115,7}{100} \times 34,736$ million ✓A ✓M *Nuwe bevolking* $= 40,190$ million ✓CA **OR/*OF*** New population $= \frac{115,7}{100} \times 34\ 736\ 000$ ✓A ✓M *Nuwe bevolking* $= 40\ 189\ 552$ ✓CA	1MA calculating percentage 1CA simplification 1CA new population 1MA calculating percentage 1CA simplification 1CA new population 1A increased percentage 1M calculating percentage 1CA new population 1A increased percentage 1M calculating percentage 1CA new population **AO** (3)	D L2

QUESTION/*VRAAG* 4 [26 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
4.1.1	weekly ✓✓RT *weekliks*	2RT correct answer (2)	D L1
4.1.2	76 ✓✓RT	2RT correct mode (2)	D L2
4.1.3	✓ A 14 660 16 360 20 250 20 330 24 695 28 435 30 685 Median = 20 330 ✓ A *Mediaan* Q1 = 16 360 ✓ A Q3 = 28 435 IQR = Q3 – Q1 = 28 435 – 16 360 ✓ SF = 12 075 ✓ CA	1A arranging values 1A median 1A quartile 1 OR quartile 3 SF substituting into the formula 1CA simplification (5)	D L3
4.2.1	R1 = £0,049 ✓✓A	2A correct exchange rate (2)	F L1
4.2.2	Price = $\frac{£250}{£0,049}$ ✓A × R1 ✓MA *Prys* = R5 102,04 ✓A	1A correct values 1MA dividing values 1A simplification (3)	F L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.3.1	Annual taxable income = R35 357,00 × 12 ✓MA *Jaarlikse belasbare inkomste* = R424 284 ✓A	1MA multiplying by 12 1A simplification (2)	F L1
4.3.2	✓RT ✓M Monthly Medical tax credits = (R332 × 2) + (R224 × 2) ✓M *Maandelikse Mediese belastingkrediete* = R664 + 448 = R1 112 ∴ Yearly MTC/ = R1 112 × 12 ✓M ∴ *Jaarlikse MBK* = R13 344	1RT correct values 1M multiplying by 2 1M adding 1M multiplying by 12 (4)	F L3
4.3.3	Annual tax/*Jaarlikse belasting* = ✓A R70 532 + 31% of taxable income above/*van belasbare inkomste bo* 337 800 ✓SF R70 532 + 31% (R424 284 – R337 800) R70 532 + (31% × R86 484) ✓CA R70 532 + R26 810,04 = R97 342,04 ✓CA Tax payable/*Belasting betaalbaar* ✓MCA = R97 342,04 – R15 714 – R13 344 = R68 284,04 ✓CA	1A correct tax bracket 1SF correct substitution 1CA simplification 1CA tax before rebates 1MCA subtracting both rebates 1CA simplification (6)	F L3

QUESTION/*VRAAG* 5 [20 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
5.1	Total cost/*Totale koste* = R1 200 + 26m ✓SF R2 760 = R1 200 + 26m ✓MA R2 760 – R1 200 = 26m ✓CA R1 560 = 26m M = 60✓CA	 1SF correct substitution 1MA subtracting R1 200 1CA simplification 1CA number of plates (4)	F L2
5.2	✓✓A Income/*Inkomste* = R50 × number of plates/*aantal borde*	2A correct formula (2)	F L2
5.3.1	**Break-even** is where the cost of making mogodu is equal to the income of selling mogodu/ ***Gelykbreek*** *is waar die koste om mogodu te maak gelyk is aan die inkomste om mogodu te verkoops* ✓✓O ✓RT 50	2O correct explanation (2) 1RT correct break even (1)	F L2
5.3.2	Profit for 100 plates/*Wins per 100 borde* = ✓RT ✓MA R5000 – R3800 = R1 200 ✓CA Fraction of 100 plates/*Breuk vir 100 borde* $= \frac{1200}{3800}$ ✓M $= \frac{8}{25}$ ✓CA Her claim is correct ✓O *Haar eis is korrek*	 1RT correct values 1MA subtracting correct values 1A correct profit 1M numerator and denominator 1CA simplification 1O conclusion (6)	F L4
5.3.3	Line graph/*Lyngrafiek* ✓✓A	2A correct graph (2)	D L2

5.3.4



D
L2

1A for any 3 points plotted correctly/*1A vir enige 3 punte korrek geplot*
1A for other 7 points plotted correctly/*1A vir enige 7 punte korrek geplot*
1CA joining points/*1CA aansluitingspunte*

TOTAL/*TOTAAL*: 150