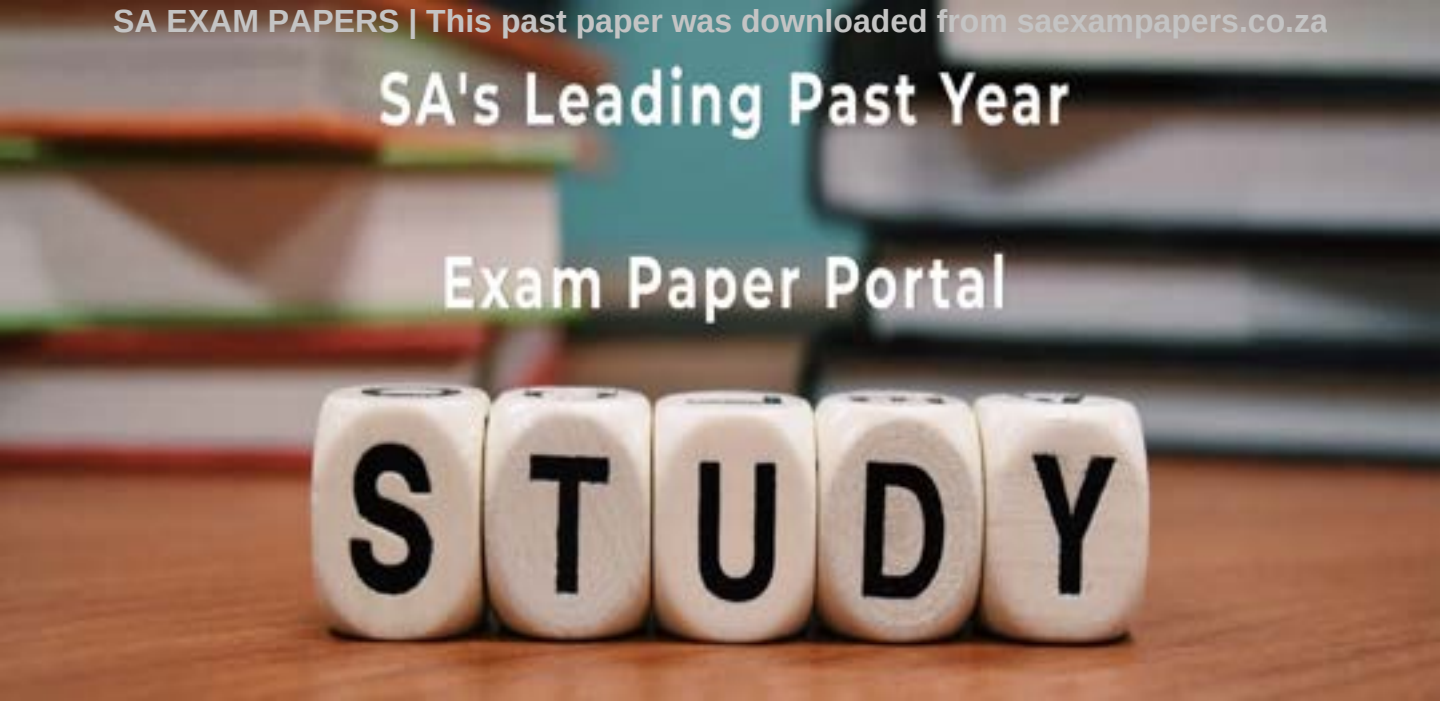

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL
SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1
PREPARATORY EXAMINATION
SEPTEMBER 2024
MARKING GUIDELINES

MARKS/*PUNTE*: 150

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

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

NOTE:

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

LET WEL:

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

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

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

1.3.2 (ii)	✓A $B = \frac{6}{2} \times R3,66$ ✓MA $= R10,98$ ✓A OR ✓A $B = 3 \times R3,66$ ✓MA $= R10,98$ ✓A	1A correct fraction 1MA multiplying by R3,66. 1CA simplification. OR 1A correct value 3 1MA multiplying by R3,66. 1CA simplification. (3)	

1.3.3	$24 \div 6 = 4$ ✓ M Actual Cost $= \frac{R54,00}{4}$ ✓MA = R13,50 ✓A OR Actual Cost ✓M $= \frac{R54,00}{24} \times 6$ ✓MA = R13,50✓A	1M dividing values. 1MA multiplying or dividing correct values. 1CA simplification. OR 1M dividing values. 1MA multiplying or dividing correct values. 1CA simplification (3)	F L2 M
1.3.4	Number of batches $= \frac{200\ g}{10\ g}$ ✓MA = 20 ✓A	1MA dividing correct values. 1A simplification. (2)	F L1 E
		[31]	

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

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

2.2.5	Deposit = 20% × R10 999,00 = R2 199,80✓A Total cost including deposit. ✓MA = R609,00 × 30 months + R2 199,80✓MCA = R20 469,80✓CA One third of the amount = R20 469,80 × ⅓ / ÷ 3 ✓MCA = R6 823,27✓CA Amount saved = R20 469,80 – R10 999,00 = R9 470,80✓CA Her statement is valid.✓O	1A deposit amount. 1MA correct value × 30 1MCA adding deposit. 1CA simplification. 1MCA dividing by 3 or × by ⅓. 1CA simplification. 1CA amount saved. 1O conclusion. (8)	F L4 D
		[33]	

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

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

	QUESTION 4 [30 MARKS]		
4.1.1	ZAR✓✓A	2A correct abbreviation. (2)	F L1 E
4.1.2	1 ZAR = US \$0,05288 ✓RT US \$1 = $\frac{1}{0,05288}$ ✓MA = R18,91074 ✓A	1RT correct exchange rate. 1MA dividing correct values. 1A simplification. NPR (3)	F L2 M
4.1.3	US dollar / US \$✓✓RT	2A correct currency (2)	F L1 E
4.1.4	USA offer in rands. ✓A = $\frac{3\ 998}{0,05288}$ ✓MA = R75 605,14✓A OR ✓A = 3 998 × R18,91074 ✓MA = R75 605,14✓A Canadian offer in rands. = 5 384 × R14,01✓MA = R75 429,84✓A Difference in rand = R75 605,14 – R75 429,84✓MCA = R175,30 ✓CA His statement is invalid / not valid.✓O	1A correct exchange rate. 1MA dividing/multiplying with correct exchange rate. 1A simplification. OR 1A correct exchange rate. 1MA dividing/multiplying with correct exchange rate. 1A simplification. 1MA multiplying with correct exchange rate. 1A simplification. 1MCA subtracting values. 1CA simplification. 1O conclusion. (8)	F L4 M
4.2			
4.2.1	Value of D in thousands of rand. ✓MA = 601 228 – (141 319 + 130 692 + 97 390)✓ RT = 601 228 – 371 835 = 229 393✓CA	1MA subtracting from 601 228. 1RT 3 correct values.; 1CA simplification. (3)	F L2 M

4.2.2	Total income in thousands of rand. = 184 556 + 196 353 + 2 613 + 264 029 + 85 381✓MA = 732 932✓A Total expenditure in thousands of rand. = 199 891 + 20 101 + 79 285 + 19 481 + 164 979 + 1 020 + 279 769 = 764 526 ✓A E = 732 932 – 764 526✓MCA = - 31 584 / (31 584) ✓CA It is a deficit.✓O	1MA adding correct values. 1A simplification 1A simplification. 1MCA subtracting correct values. 1CA simplification. 1O conclusion. (6)	F L3 M
4.3			
4.3.1	% ordering Egusi soup = 15%✓A If 20% of the total = 60 1% of the total = 60÷ 20 = 3✓MA 15% of the total = 15 × 3✓MA = 45✓CA OR Total number of customers = $\frac{60}{20\%}$ ✓MA = 300✓A Number of customers ordering Egusi soup = 15% × 300✓MA = 45✓CA OR ✓MA ✓A 20%: 60 = 15%: X X = $\frac{15\%}{20\%}$ × 60 ✓MA = 45✓CA	1A % ordering Egusi soup. 1MA calculating 1%. 1MA multiplying by 15. 1CA simplification. OR 1MA dividing 60 by 20%. 1A total number of customers. 1MA calculating 15%. 1CA simplification. OR 1MA correct ratio. 1A % ordering Egusi soup. 1MA calculating number of customers. 1CA simplification. (4)	D L2 D
4.3.2	Probability (not ordering Pounded Yam) = $\frac{65}{100}$ ✓A✓A OR = $\frac{13}{20}$ ✓A✓A	1A numerator. 1A denominator. (2)	D L3 M
		[30]	

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

5.2.3	Amount payable. ✓ RT ✓RT ✓MA = (50 kwh × R0) + (100 kwh × R1,7322) = R173,22	1RT 50 kwh. 1RT 100 kwh. 1MA multiplying with the correct tariff. (3)	F L2 E

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