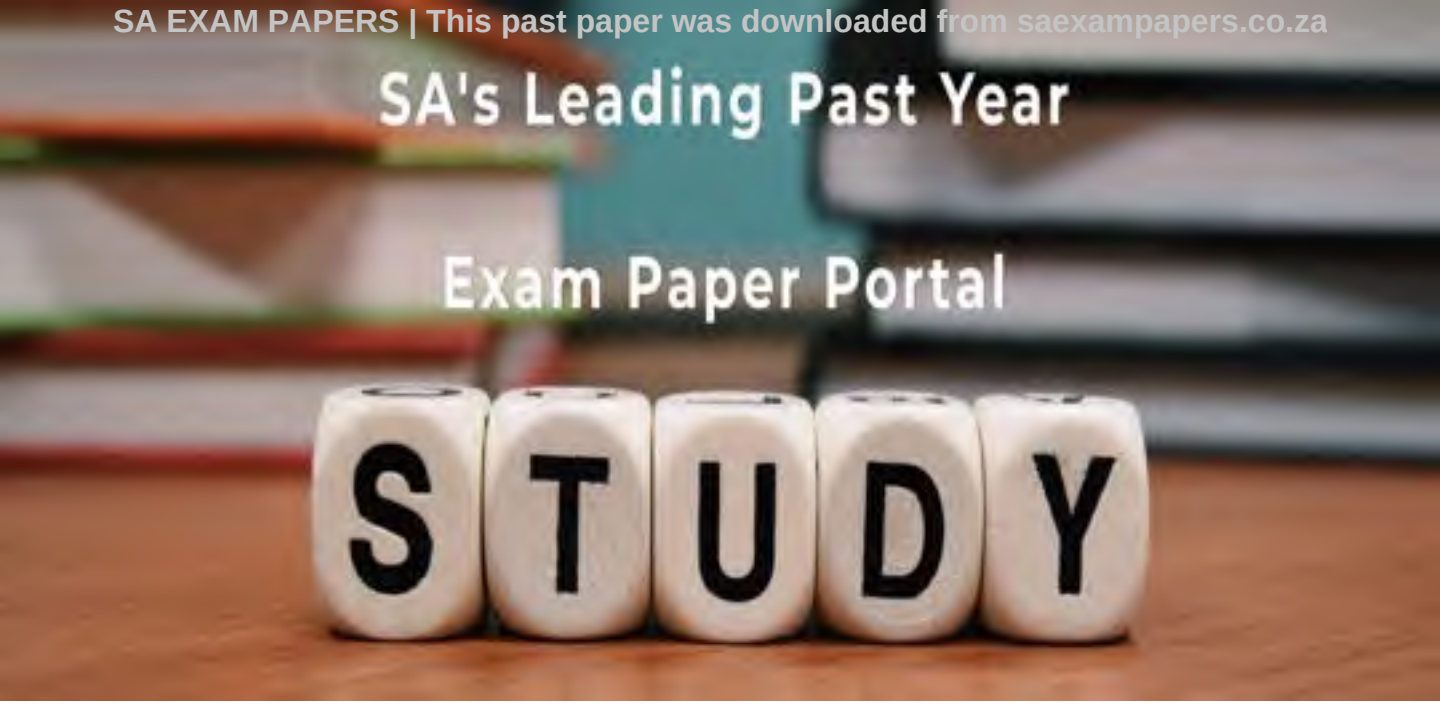

FINAL

KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

MEMO

SEPTEMBER 2024

MARKS: 150

SYMBOL	EXPLANATION
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD/RM	Reading from a table/ graph/ diagram/map
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example/Explanation
J	Justification
R	Rounding off
F	deriving a formula
AO	Answer only full marks
P	Penalty e.g. for units, incorrect rounding off etc.
NPR	No penalty for rounding / units

This marking guideline consists of 9 pages.

QUESTION 1 [30 MARKS] FULL MARKS ANSWER ONLY			
Ques	**Solution**	**Explanation**	**T & L**
1.1.1	Discrete✓✓A	2A correct answer (2)	DH L1 E
1.1.2	Forty-nine thousand six hundred and twenty-eight rands.✓✓A	2A correct answer (2)	DH L1 E
1.1.3	R60 392; R61 408; R66 000; R66 358; R70 430; R74 620; R78 500; R79 860✓✓A	2A correct answer (2)	DH L1 E
1.1.4	University of KwaZulu Natal ✓✓	2RT reading from table (2)	F L1 E
1.1.5	27 610 = A – 45 390✓MA A = 27 610 + 45 390 A= 73 000✓A	1MA concept of range A correct answer (2)	F L1 D
1.1.6	Total Income = 187 × R84 060✓MA = R15 719 220✓A	1MA multiplying by 187 1A correct answer (2)	F L1 E
1.2.1	Amount carried over from February statement to the March statement from Nombuso's account.✓✓O	2O correct definition (2)	F L1 E
1.2.2	B = R74 040,44 – R3,80✓MA = R74 036,64✓A **OR** B = R79 236,64 - R5 200✓MA = R74 036,64✓A	1MA subtracting R3,80 1A correct answer **OR** 1MA subtracting R5 200 1A correct answer (2)	F L1 E
1.2.3	✓MA Total Cash Withdrawals = R1 800 + R 9 750,00 = R11 550✓A	1MA adding correct amounts 1A correct answer (2)	F L1 E
1.2.4	R43 000✓✓R	2R correct rounding (2)	F L1 E
1.2.5	✓A 52 : 5 200 1 : 100✓S	1A correct order 1S Simplification (2)	F L1 E
1.2.6	Difference = R 300,50 – R 1,20✓MA = R 299,30✓A	1MA subtracting correct values 1A correct answer (2)	F L1 E
1.3.1	93 petrol inland.✓✓RG	2RG reading from graph (2)	DH L1 E

1.3.2	Difference = R22,49 – R21,77✓MA = R0,72 or 72 cents✓A	1MA subtracting 1A answer. (2)	F L1 E
1.3.3	No mode✓✓A	2A correct answer (2)	DH L1 E
		[30]	

QUESTION 2 [32 MARKS]			
2.1.1	3 bedrooms, 1 bathroom/shower, 1 garage and parking area for 3 cars✓✓A	2A any two features (2)	F L1 E
2.1.2	Monthly repayment = $\frac{\text{R1 500 000} \times 10{,}16\checkmark\text{RT}}{1\,000\checkmark\text{SF}}$ = R15 240✓CA	1RT for 10,16 1SF correct substitution 1CA answer (3)	F L2 M
2.1.3	Total = R46 791,50 + R34 791,50✓MA = R81 583✓CA	1MA adding 1CA answer (2)	F L2 E
2.1.4	Loan Amount = 105% × R1 500 000✓MA = R1 575 000✓A Total including transfer costs = R1 500 000 + R81 583✓MCA = R1 581 583✓CA Difference = R1 581 583 – R1 575 000✓MCA = R6 583✓CA Statement is INCORRECT.✓O	**CA from 2.1.3** 1MA multiplying by 105% 1A simplifying 1MCA adding 1CA simplifying 1MCA subtracting 1CA answer 1O opinion (7)	F L4 D
2.1.5	Monthly Repayment = $\frac{\text{R1 575 000} \times 10{,}16}{1\,000}$ = R16 002✓A ✓C Real Cost of the Loan = R16 002 × (25× 12)✓MCA = R4 800 600✓CA Interest = R4 800 600 – R1 575 000✓MCA = R3 225 600✓CA	1A simplifying 1C years to months 1MCA multiplying 1CA answer 1MCA subtracting 1CA answer (6)	F L3 D

2.1.6	✓MA $\frac{1}{20} \times$ R1 500 000 = R75 000✓A R81 583 > R75 000✓A His statement is VALID✓O **OR** $\frac{1}{20}$ = 0,05 $\frac{\text{R81 583}}{\text{R1 500 000}}$ ✓M = 0,05438866665✓C ✓A 0,05438866665 > 0,05 His statement is VALID✓O	**CA from 2.1.3** 1MA multiplying 1A simplifying 1A for > or greater than 1O opinion **OR** 1M for dividing by R1 500 000 1C conversion 1A for > or greater than 1O opinion (4)	F L4 D
2.2.1	Interest = 12% ÷ 2✓MA = 6 %✓A	1MA dividing by 2 1A correct answer (2) **AO**	F L2 E
2.2.2	Total Amount Year 1 = R7000 + (11,75% × R7 000)✓MA = R7 000 + R822,50 = R7 822,50✓A ✓MCA Amount 1st 6 months = 7 822,50 + (6% × R7 822,50) = R7 822,50 + R469,35 ✓MCA = R8 291,85✓CA Total 2nd 6 months = R8291,85 + (6 % × R8 291,85) = R8 291,85 + R497,51 = R8 789,36✓CA **OR** Total Amount Year 1 = R7000 × 1,1175 ✓MA = R7 822,50✓A ✓MCA Amount 1st 6 months = 7 822,50 × 1,06 = R8 291,85✓CA Total 2nd 6 months = R8 291,85×1,06 = R8 789,36✓CA	**CA from Q2.2.1** 1MA multiplying by 11,75% 1A answer 1MCA multiplying by 6 % 1MCA for adding interest 1CA for correct answer 1CA answer 1MA multiplying by 11,75% 1A answer 1MCA multiplying by 6 % 1CA for correct answer 1MCA multiplying by 6 % 1CA answer (6)	F L3 M
		[32]	

QUESTION 3 [30 MARKS]			
3.1.1	Stacked bar graph✓✓A	2A correct answer (2)	DH L1 E
3.1.2	Male✓✓A	2A correct answer (2)	DH L1 E
3.1.3	Mean $= \frac{47{,}6\% + 41{,}8\% + 38{,}5\% \checkmark MA}{3 \checkmark MA}$ $= 42{,}63\% \checkmark A$	1MA adding percentages 1MA dividing by 3 1A answer (3)	DH L2 E
3.1.4	Total = 445 330 + 319 372✓MA = 764 702✓A Percentage $= \frac{764\,702}{389\,400\,000 \checkmark C} \times 100\% \checkmark MA$ $\approx 0{,}20\% \checkmark A$	1M adding tourists 1A simplifying 1MA % concept 1C for conversion 1A answer **NPR** (5)	DH L3 M
3.2.1	(A) F✓A (B) SADC✓A (C) F & SADC✓A	1A for F 1A for SADC 1A for F & SADC (3)	P L3 E
3.2.2	P(Tourist from SADC) $= \frac{2 \checkmark A}{6 \checkmark A}$ $= \frac{1}{3} \checkmark CA$	**CA from Q3.2.1** 1A numerator 1A denominator 1CA answer (3)	P L2 E
3.3.1	51 g✓✓A	2A answer (2)	DH L1 E
3.3.2	52 g✓✓RG	2RG reading from graph (2)	DH L1 E
3.3.3	Range = 60 g – 46 g✓MA =14 g✓A IQR = Q3 – Q1 = 57g – 49g✓MA = 8g✓A Difference = 14 g – 8 g = 6 g✓CA	1MA subtracting 1A answer 1MA subtracting 1A answer 1CA correct answer (5)	DH L2 M

3.3.4	Type A✓A 25% of the tomatoes weigh more than that of type B and are larger with a maximum mass of 60 g✓✓J **OR** Type B✓A 25% of type A tomatoes weigh less than that of type B and are less than 49g ✓✓J	1A correct type 2J correct answer (3)	DH L4 D
		[30]	

QUESTION 4 [30 MARKS]			
4.1.1	✓MA Percentage increase $= \frac{R27,58 - R25,42}{R25,42 \checkmark MA} \times 100\%$ $\approx 8,50\% \checkmark A$	1MA subtracting R25,42 from R27,58 1MA dividing by R25,42 1A answer **NPR** (3)	F L2 M
4.1.2	It provides a short-term relief.✓✓O	2O opinion (2)	F L4 E
4.1.3	Daily income: 8 × R27,58 = R220,64✓MA ✓MA ✓MA Monthly income = 5 × 4,333 × R220,64 = R4 780,17✓CA Her claim is VALID✓O	1MA multiplying R27,58 by 8 1MA 5 days in a week 1MA multiplying R220,64 by 4,333 1CA correct answer 1O opinion (5)	F L4 D
4.2.1	Tax Free Amount $= \frac{1}{3} \times$ R3 240 000✓MA = R1 080 000✓A	1MA multiplying 1A answer (2)	F L2 E
4.2.2	✓MA ✓SF Tax = R39 600 + 27% (R1 155 000 – R770 000) = R39 600 + R103 950✓MA = R143 550	1MA correct rate of tax 1SF substitution 1MA for R103 950 (3)	F L3 M
4.2.3	Taxable Amount = R3 240 000 R1 080 000✓MCA = R2 160 000✓CA ✓A ✓SF Tax = R143 550 + 36% (R2 160 000 - R1 155 000) = R505 350✓CA	**CA from 4.2.1** 1MCA subtracting 1CA answer 1A correct tax rate 1SF substitution 1CA answer (5)	F L3 M
4.3.1	2✓✓RG	2RG reading from graph (2)	DH L1 E
4.3.2	Increase in technology results in a decline in a need for labour force.✓✓A	2 A correct answer (2)	DH L4 E
4.3.3	✓RT Unemployment Rate Change = 31,9% - 32,6%✓MA = -0,7%✓A	1RT both correct values 1MA subtracting 1A answer (3)	DH L2 M
4.3.4	P(Decrease in Unemployment Rate) $= \frac{7 \checkmark A}{9 \checkmark A} \times 100\%$ = 77,78%✓CA	1A for 2 1A for 9 1CA answer **NPR** (3)	DH L2 M
		[30]	

QUESTION 5 [28 MARKS]			
5.1.1	300 kWh✓✓A	2A answer (2)	F L1 E
5.1.2	Tariff rate = 205,46/kWh ÷ 100✓MA = R2,0546/kWh✓A	1MA conversion 1A correct answer (2)	F L2 E
5.1.3	✓RT Amount excluding VAT = R417,72 ÷ 115%✓MA = R363,23✓A **OR** ✓RT Amount excluding VAT = R417,72 × $\frac{100}{15}$✓MA = R363,23✓A **OR** ✓RT Amount excluding VAT = R417,72 ÷ 1,15✓MA = R363,23✓A	1RT for R417,72 1MA dividing by 115% 1A answer **OR** 1RT for R417,72 1MA multiplying by $\frac{100}{15}$ 1A answer **OR** 1RT for R417,72 1MA dividing by 1,15 1A answer (3)	F L2 M
5.1.4	687 kWh = 50 kWh + 300 kWh + 250 kWh + 87 kWh Charge = 50(1,0793) + 300(1,3831) + 250(1,9651) + 87(2,0546)✓MA = R1 138,9202✓A Amount including VAT = 115% × R1 138,9202✓MA = R1 309,76+ R417,72✓MA = R1 727,48✓CA Statement is INVALID✓O **OR** 687 kWh = 50 kWh + 300 kWh + 250 kWh + 87 kWh Charge = 50(1,0793) + 300(1,3831) + 250(1,9651) + 87(2,0546)✓MA = R1 138,9202✓A VAT: 15% × R1 138,9202 = R170,84✓A Amount including VAT = R1 138,9202 + R170,84 + R417,72✓MA = R1 727,48✓CA Statement is INVALID✓O	1MA multiplying by rates 1A correct answer 1MA multiplying by 115% 1MA adding 1CA answer 1O opinion **OR** 1MA multiplying by rates 1A correct answer 1A for VAT 1A for R1 309,76 1MA adding 1CA answer 1O opinion (6)	F L4 D

5.1.5	Amount excluding Service fee = R825,91 – R 417,72✓MA Amount excluding VAT =R408,19 ÷ 1,15✓MA = R354,95✓CA	1MA for subtracting R417,72 1MA dividing by 1,15 1CA answer (3)	F L3 M
5.2.1	89 cm✓✓RG	2RG reading from graph (2)	DH L2 E
5.2.2	Weight is multiplied by 1,3 in the new formula✓A Height is to the power 2,5 in the new formula✓A	1A for 1,3 1A for 2,5 (2)	DH L2 M
5.2.3	Weight = 67 kg✓RG Height = 1,67 m✓RG	1RG reading from graph 1RG reading from graph (2)	DH L2 M
5.2.4	Old Formula: BMI = $\frac{70kg}{(1,65\ m)^2}$ ✓SF = 25,71 kg/m^2✓A New Formula: BMI = $\frac{1,3 \times 70kg}{(1,65\ m)^{2,5}}$ ✓SF = 26,02 kg/m^2✓A Difference = 26,02 –25,71 ✓MCA = 0,31 kg/m^2✓CA	1SF substitution 1A answer 1SF substitution 1A answer 1MCA subtraction 1CA answer (6)	F L3 M
		[28]	
		TOTAL MARKS: 150	