

# NATIONAL SENIOR CERTIFICATE

**GRADE 12** 

#### **MATHEMATICAL LITERACY P1**

PREPARATORY EXAMINATION

#### **MARKING GUIDELINE**

SEPTEMBER 2021

**MARKS: 150** 

SYMBOL	EXPLANATION
M	Method
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
О	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

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2 Marking Guideline

QUES	TION 1 [30 MARKS]		
Ques	Solution	Explanation	T & L
1.1.1	Compound bar graph✓✓A  OR  Multiple Bar graph✓✓A	2A correct answer (2)	DH L1
1.1.2	76,5%✓✓RT	2RT reading from table (2)	DH L1
1.1.3	North West and Northern Cape ✓ RT	1RT for NW 1RT for NC	DH L1
1.1.4	11 189; 10 984; 9 400; 9 392; 3 039; 1 784; 1 213; 1 057; 650✓✓A	2A answer (2)	DH L1
1.1.5	There is no relationship ✓ ✓ A	2A amount (2)	DH L1
1.2.1	337674956✓✓A	2A answer (2)	F L1
1.2.2	01 April 2021 <b>OR</b> 01/04/2021 ✓ A	2A answer (2)	F L1
1.2.3	Value Added Tax✓✓A	2A answer (2)	F L1
1.2.4	R101,70✓✓RG	2RG correct reading (2)	F L1
1.3.1	The amount buyers will pay for the goods Xolani is selling ✓ ✓ 0	2E explanation (2)	F L1
1.3.2	R11,99✓✓A	2A correct answer (2)	F L1
1.3.3	Coke cans ✓ A Oil Sunola ✓ A Lucky Star Fish ✓ A	1A for Coke cans 1A for Oil Sunola 1A for Lucky Star Fish	F L1
1.3.4	Number of cans = $\frac{R92,99}{R15,49} \checkmark M$	1M dividing 1A simplification	F
	= 6 ✓A	<b>AO</b> (2)	L1

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	Warking Outderine		
1.3.5	Total Cost Price = $R524,99 + R204,99 + R204,99 + R204,99$		F
	+R144,99 + R107,99 + R92,99 + R88,99 +R66,99 ✓ A ✓ M = R1 641,91 ✓ CA	1A all correct values 1M adding 1CA answer 2 values left out 1 out of 3	L1
		(-)	
		[30]	

QUES	TION 2 [45 MARKS]		
2.1.1	R100✓✓RT	2RT correct reading	F
		(2)	L1
2.1.2	R6 121,00✓✓RT	2RT correct reading	F
(a)		(2)	L1
2.1.2	R6 121 − R8 481 ✓ MA	1MA subtracting correct	F
(b)	Percentage = $\frac{10.131 \text{ M}}{\text{R8 } 481 \text{ / M}} \times 100\%$	values	
	$=-27,83\%\sqrt{A}$	1M dividing by R8 481	
		1A answer	
	OR	OR	
	R8 481 − R6 121 ✓ MA	1SF for substitution	
	Percentage decrease = $\frac{10.121 \text{ m}}{\text{R8 481} \text{ / M}} \times 100\%$	1M dividing by R8 481	
	= 27,83%√A	1A answer	
		(3)	L2
2.1.3	✓RT ✓MA ✓MA	1RT for R1 462,72	F
	$R1\ 462,72 - R165,00 + R23,35 = R1\ 321,07$	1MA subtracting R165	
		1MA adding R23,35	
		(3)	L2
2.1.4	R23,35✓✓RT	2RT correct answer	F
		(2)	L1
2.2.1	Primary Rebate (R14 958) ✓ ✓ A	1A for Primary Rebate	F
		1A for R14 958	
		(2)	L1
2.2.2	Monthly Pension Contribution = 7,5% × R32 800 ✓ M	1M multiplying by 7,5%	F
	= R2 460 ✓ A	1A answer	
		(2)	L2
2.2.3	January taxable income	CA from 2.2.2	F
	$= 2(R32800) - R2460 + R7100 \checkmark M$	1M for R65 600 and	
	= R70 240 ✓ CA	adding R7 100	
		1M for subtracting 2 460	
		1CA answer	L2
		(3)	
2.2.4	Annual MTC = $12[2(R319) + 3(R215)]$ MA	1MA multiplying by 12	F
	= R15 396√CA	1CA answer	
		(2)	L2

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225	Marking Guideline	CA 6 222 1224	
2.2.5	Annual taxable income excluding bonus:	CA from 2.2.2 and 2.2.4	_
	Annual taxable income = 12(R39 900 − R2 460) ✓ M	1M multiplying by 12	F
	= R449 280 ✓ CA	1CA answer	
	Annual tax excluding bonus:		
	Tax = R105429 + 36%(R449280 - R445100) - R14958 -	1A correct tax rate	
	R15 396✓A✓M	1M subtracting rebate	
	= R76 579.80 ✓ CA	and MTC	
	Monthly tax = $R76579,80 \div 12\checkmark M$	1CA answer/accuracy	
	= R6 381,65 ✓ CA	1M dividing by 12	
	110 002,000 011	1CA answer/accuracy	
		(7)	L3
2.2.6	Tax deducted = R6 381,65 + R11 808 ✓ SF	CA from 2.2.5	F
	= R18 189,65 ✓ CA	1SF substitution	
	1120 207,00 011	1CA answer	
		(2)	L2
2.3.1	Number of bulbs = 7✓A	1A number of bulbs	F
2.3.1	Cost for lighting the house = $7 \times R31,41 \checkmark M$	1M multiplying by 7	
	$= R219.87 \checkmark CA$	1CA answer	
	- N217,0/* CA	(3)	L2
2.3.2	<b>7 bulbs</b> : R31,41 × 7 = R219,87	CA from 2.3.1	F
2.3.2	Stove: R141,35 + R52,35 + R188,46 + R31,41 $\checkmark$ M	1M adding stove cost	•
	$= R413,57 \checkmark A$	1A simplifying	
	•	1A simplifying 1A simplifying	
	<b>3 Cellphone chargers</b> : $3 \times R2,05 = R6,15 \checkmark A$	174 Shiriphiying	
	Total = $R219.87 + R413.57 + R6.15 + R1 126.77 \checkmark M$	1M adding	
	$= R1.766,36 \checkmark CA$	1CA answer/accuracy	
	- K1 766,56 CA Claim is invalid ✓ 0	10 opinion	
	Glaini is invaliu.	(6)	L4
2.3.3	Geyser: Charge = $2 \times 2 \times 30 \times R2,0940c \checkmark M$	1M multiplying by 2,094	F
	$= R251,28\checkmark CA$	1CA answer/accuracy	
	OR	OR	
	2	2	
	$Cost = \frac{2}{5} \times R628,20 \checkmark M$	1M multiplying by $\frac{2}{5}$	
	= R251,28 ✓ CA	1CA answer/accuracy	
	— 1(251,20° GA		
	Stove: $R141,35 + R31,41 = R172,76 \checkmark M$		
	Total = R424,04 $\checkmark$ CA	1M adding	
		1CA total cost	
	Claim is NOT valid ✓ 0	1O opinion	
		(5)	L4
		[45]	174
		[45]	

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QUES	TION 3 [28 MARKS]		
3.1.1	First 12 months: Interest = 7.8% × R5 000,00 ✓ M	1M multiplying by 7.8%	F
	= R390√A	1A simplifying	
	= R5000+R390	1A answer (R5 390)	
	Amount = R5 390 ✓ CA	1MA multiplying by	
		R5 390	
	Last 12 months: Interest = 7.8% × R5 390 ✓ MA	1A simplifying	
	$= R420,42\checkmark A$	1CA answer	
	$= R420,42 \cdot A$ = R5390+R420,42	1 C/ L ans wer	L3
	<u>'</u>		LS
	Amount = R5 810,42 $\checkmark$ CA	OR	
	OR	UK	
	First 12 months: Interest = 1.078 × R5 000,00 ✓ ✓ M	2M multiplying by 1,078	
	Amount = R5 390 ✓ CA	1CA answer (R5 390)	
	Last 12 months: Interest = 1,078 × R5 390 ✓ ✓ MA	2MA multiplying by	
	Amount = R5 810,42 $\checkmark$ CA	1,078	
	Amount – 13 010,427 CA	1CA answer	
		(6)	
3.1.2	Option 2: Interest = 9,5% × R5 000 ✓ M	1M multiplying by 9,5%	F
	= R475 ✓ A	1A simplifying	
	Total Amount = $R5\ 000 + 2(R475)\checkmark M$	1M multiplying by 2	
	$= R5 950 \checkmark A$	1A answer	
	= K5 950V A		
	OP	10 opinion	L4
	OR	OR	L4
	O 1 2 P5000 - 2/P5000 - 0 F0/) / /M /A	OK	
	Option 2: $=R5000 + 2(R5000 \times 9,5\%) \checkmark M \checkmark A$	134 1:1: 1 0.50	
	=R5950 <b>√</b> A	1M multiplying by 9,5%	
		1M multiplying by 2	
	Option 1 is better ✓ 0	1A adding interest	
		1A answer	
		10 opinion	
		(5)	
3.1.3	Increase = $4.3\% \times R6.29 \times 1700 \checkmark M$	1M multiplying	F
	= R459,80 ✓ A	1A simplifying	
	✓M	1M multiplying by 1 700	
	Total to be paid: $R6,29 \times 1700 + R459,80 = R11152,80 \checkmark CA$	1CA answer	
	OR	OR	
	✓ M		
	Total to be paid = $1,043 \times R6,29 \times 1700 \checkmark M$	2M for 1,043	
	= R11 152,80√A	1M for multiplying by	
	1111100,000 11	1700	L2
		1A answer	
		(4)	
		(4)	

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	Marking Guidenne		
3.2.1	Loan Amount = 1,10 × R780 000 ✓ M	1M multiplying	F
	= R858 000 ✓ A	1A simplifying	
	R858 000 × 8,74	1SF substitution	
	Monthly Repayment = $\frac{1000 \times 374}{1000}$ SF		
	= R7 498,92 \( \screen CA	1CA answer	L2
	- K/ 470,72 ₹ GA		LZ
		(4)	
3.2.2		<b>CA from 3.2.1</b>	F
	Loan Period = 300 months ✓ C	1C conversion	
	Real Cost of Loan = R7 498,92 × $(12 \times 25)$ ✓ M	1M multiplying by 300	
	= R2 249 676√CA	1CA answer	L2
	10 2 15 07 0 UI	(3)	
2 2 2			F
3.2.3		<b>CA from 3.2.3</b>	F
	Total interest = R2 249 676 − R858 000 ✓ M	1M subtraction	
	= R1 391 676 <b>√</b> CA	1CA answer	
		(2)	L1
		[24]	

### 7 Marking Guideline

QUES	STION 4 [25 MARKS]		
4.1.1	Discrete ✓ A	1A for discrete	DH
	Number of people is countable ✓ 0	10 for countable	
		(2)	L4
4.1.2	1,8% ✓✓RG	2RG answer	DH
		(2)	L1
4.1.3	15,2% × 126 058 811 ✓ M	1M multiplying	DH
	= 19 160 939 ✓ A	1A simplification	
		(2)	L2
4.1.4	Range = $65.4 - 1.8 \checkmark M$	1M concept of range	DH
	= 63,6% <b>√</b> A	1A for answer	
		AO	L2
		(2)	
4.1.5	Mean	1A correct	DH
	65,4 + 52,2 + 61,4 + 61,6 + 45 + 20,5 + 26,6 + 12,7 + 63,4 +	percentages	
	$1,8 + 151 + 20,5 + 15,2 + 24,5 \checkmark A \checkmark M$	1M adding	
	14√M	1M dividing by 14	
	= 34,71 <b>√</b> CA	1CA answer	L2
	≈ 34,7% <b>√</b> R	1R for rounding off	
		(5)	
4.1.6	The median because the data entries are widely spread	2A/J answer with	DH
	and there is an outlier (1,8%)√√A/J	justification	
		(2)	
			L3
4.1.7	Negatively affected by outlier(s) $\checkmark \checkmark 0$	2O opinion	DH
		Accept any	L4
		reasonably answer	
		according to the	
		context (2)	

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$4.1.8  \frac{8\sqrt{\text{CA}}}{14\sqrt{\text{A}}} \times 100\%$	V	CA from 4.1.5 1CA for 8 1A for 14	P
= 57,1% ✓ R		1R rounding off to 57,1% (3)	L2
4.2.1   ib	SC, ib  SC, cl  SC, sp  SC, sp  SSR, ib  SSR, cl  SSR, sp  CC, ib  CC, cl  CC, sp  SV, ib  SV, cl  SV, sp✓	1A for CC 1A for sp (2)	P L3
4.2.2 2 × A 1		1A for numerator	P
$\frac{4.2.2}{12\checkmark A} = \frac{1}{6} \checkmark S$		1A for denominator 1S simplifying (3)	L2
		[25]	1.2

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OTIEG	Marking Guideline		
	TION 5 [22 MARKS]		
5.1.1	Minimum = 12%✓RG	1RG for the minimum	DH
	Maximum = 96% ✓ RG	1RG for the maximum	
		(2)	L2
5.1.2	Lower Quartile Mark = 28% ✓ RG	1RGfor Lower	DH
5.1.2	120√A	Quartile	
	Number of learners —	1A for 120	
	4/M		
	= 30 <b>√</b> CA	1M for dividing by 4	
		1CA for the answer	
	OR		
		OR	
	Lower Quartile Mark = 28% ✓ RG	1RG for Lower	
	Number of learners = 25% of 120√A	Quartile	
		1A for 25% of 120	
	$=\frac{25}{100} \times 120 \checkmark M$	1M for method	
	= 30√CA	1CA for the answer	
		TCA for the answer	
	OR		
		OR	
	Lawren Overtile Mark - 200/ /DC	1RGfor Lower	L3
	Lower Quartile Mark = 28% ✓ RG	Quartile	
	Number of learners = $0.25 \times 120 \checkmark M$	1M for 0,25	
	= 30 <b>√</b> CA	1M for multiplying	
		1CA for the answer	
		(4)	
5 1 2	Lawren Owertile 220/ /DC	` /	DII
5.1.3	Lower Quartile = 22% ✓ RG	1RG for Lower	DH
	Upper Quartile = 58% ✓ RG	Quartile	
	$IQR = 58\% - 22\% \checkmark SF$	1RG for Upper	
	= 36% ✓ CA	Quartile	
		1SF substitution	L3
		1CA for	
		answer/accuracy	
		(4)	
5.1.4	2019 Class ✓ A	1A for the class	DH
J.1.4		1O maximum mark	ווען
	Higher maximum mark ✓ 0		
	Higher Lower Quartile ✓ 0	10 for Lower Quartile	
	Higher Upper Quartile ✓ 0	10 for Upper Quartile	
		(4)	L4
5.2.1	Broken line graph√√A	2A answer	DH
		(2)	L1
5.2.2	2019 ✓ RG, 25% ✓ RG	1RG year	DH
5.2.2	2017 Rd, 2070 Rd	1RG percentage level	
		1	12
		(2)	L2

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	Marking Guideline			
5.2.3	<b>√</b> 0	2O describing the	DH	
	Fraud in the middle management decreased from 2016 to 2020	trend for middle		
	<b>√</b> 0	managers		
	while junior and senior management increased from 2016 to 2020.	2O describing the		
		trend for senior		
		managers		
		(4)	L4	
5.2.4	R1,45 billion: \$100 million	1A converting both	F	
3.2.1	KI, 15 SIMON . \$100 MIMON	values	1	
	R1 450 000 000 : \$100 000 000 ✓ A	varues		
	K1 430 000 000 . \$100 000 000			
	100 000 000	1M dividing		
	$R1: \frac{100\ 000\ 000}{1\ 450\ 000\ 000}  \checkmark M$	1M dividing		
	1 430 000 000	104 -:1:6:4:		
	R1: \$0,06896 CA	1CA simplification		
	R1: \$0,06990 C11 R1: \$0,069	10		
	K1: \$0,009 V K	1R correct rounding		
	OP			
	OR			
	D4 451 111	OR		
	R1,45 billion: \$100 million			
	D4 470 111 0400 111 (4			
	R1 450 million : \$100 million ✓ A			
		1A converting value		
	R1: $\frac{100 \text{ million}}{\sqrt{M}}$			
	$R1: \frac{100 \text{ million}}{1450 \text{ million}} \checkmark M$	1M dividing		
	R1: \$0,06896 ✓CA			
	R 1: \$0,069  ✓R	1CA simplification		
		1R correct rounding		
			L3	
		(4)		
		[26]		
		TOTAL: 150 MARKS	1	
	TOTAL: 130 WARKS			