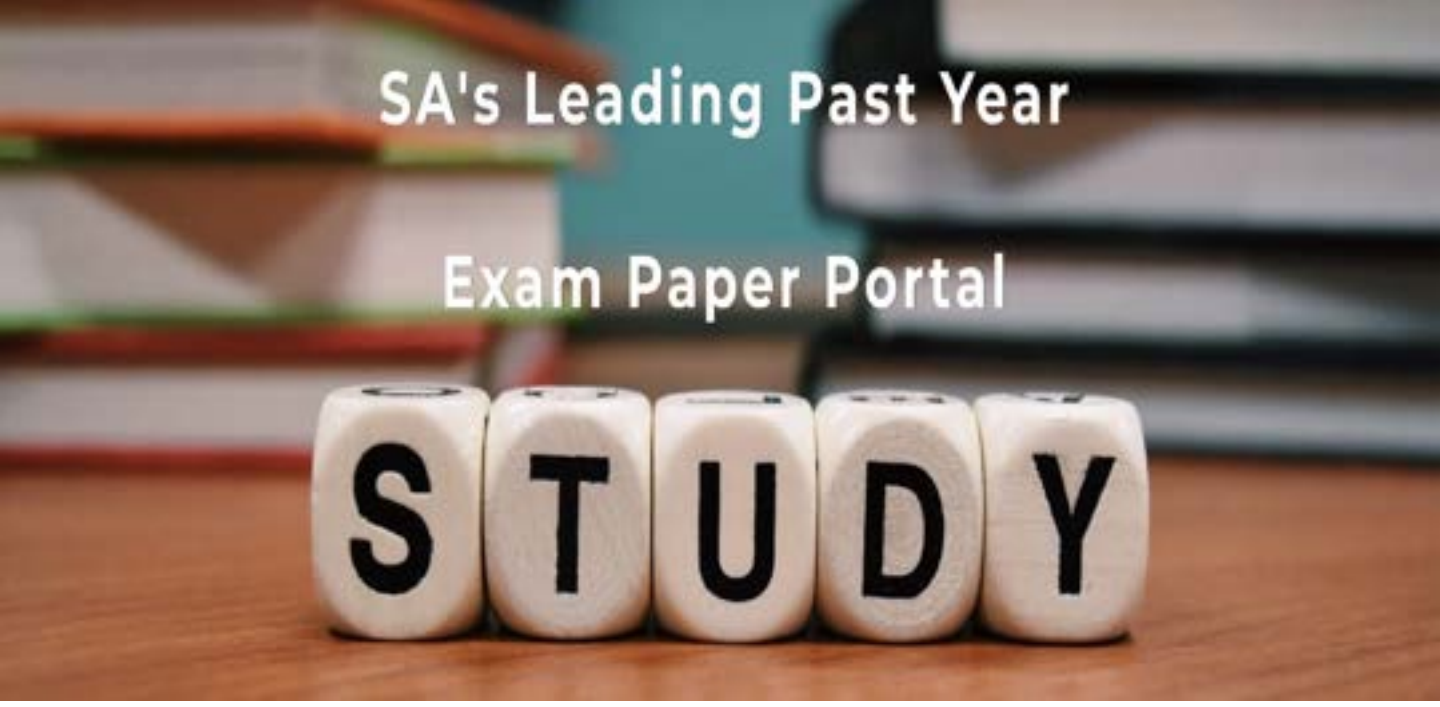

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GRADE 12

MATHEMATICAL LITERACY

COMMON TEST

MARKING GUIDELINE

MARCH 2023

MARKS: 100

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
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
D	Correct definition

This marking guideline consists of 8 pages.

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QUESTION 1 [20 MARKS] AO FULL MARKS			
QUE	**Solution**	**Explanation**	**T&L**
1.1.1	Money deducted from Nombuso's account✓✓A **OR** Accept any valid definition relating to the context.	2A correct definition (2)	F L1
1.1.2	32 days✓✓A	2A correct number of days (2)	F L1
1.1.3	Monthly✓	2A correct frequency (2)	F L1
*1.1.4	✓RT VAT = R291,55 − R253,46✓M = R38,09	1RT for R291,55 1M for subtraction (2)	F L1
1.2.1	Personal Income Tax✓✓A	2A answer (2)	F L1
1.2.2	R587 900 million✓✓A	2A answer (2)	F L1
1.2.3	✓M ✓M Total = R587,9 bn + R439,7bn + R269,9bn + R92,6b + 62,5bn +R40,9✓M = R1 493,5 bn	1M first pair 1M second pair 1M third pair (3)	F L1
1.2.4	Deficit = R1 493,5bn − R2 130bn✓M = (R636,5bn)✓A = (R636 500 000 000)✓CA	1M subtracting 1A answer 1CA answer in full (3)	F L1
*1.2.5	P(greater than R200 billion) = $\frac{7}{9}$ ✓A ✓A	1A for numerator 1A for denominator (2)	P L1
		[20]	

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QUESTION 2 [30 MARKS]			
2.1.1	R905,33✓✓RT	2RT answer (2)	F L1
2.1.2	(i) Y✓A (ii) Z✓A (iii) X ✓A	1A for Y 1A for Z 1A for X (3)	F L1
2.1.3	VAT = R905,33 − (R905,33 ÷ 1,15)✓M = R905,33 − R787.24 = R118,09✓A **OR** VAT = R905.33 × (15 ÷ 115)✓M = R118.09✓M	1M dividing 1.15 1A answer **OR** 1M dividing 115 1A answer (2)	F L2
2.1.4	Charge = 4(22,26) + 5(23,23) + 5(32,57) + 4(45,01)✓✓M = R548,08✓A ✓M Total Payment = R548,08 × 1,15 + R905,33✓M = R1 535,62✓CA **OR** Charge = 4(22,26) + 5(23,23) + 5(32,57) + 4(45,01)✓✓M = R548,08✓A VAT = 15% × R548,08 = R82,21✓M Total Payment = R548,08 + R82,21 + R905,33✓M = R1 535,62✓CA	2M for adding all correct values 1A answer 1M multiplying by 1,15 1M adding R905,33 1CA answer **OR** 2M for adding all correct values 1A answer 1M for VAT 1M for adding 1CA answer (6)	F L3
2.2.1	Monthly interest rate = 28% ÷ 12✓M = 2,333333333%✓A	1M dividing by 12 1A answer (2)	F L2
2.2.2	✓M Real Cost of Loan = 20(R1 891,16) + R79,35 + R1 207,50✓M = R39 110,05✓A	1M multiplying by 20 1M adding R79,35 and R1 207,50 1A answer (3)	F L2

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2.2.3	✓M ✓M Interest $= 20(R1\,891{,}16) + R79{,}35 - R30\,000$✓M $= R7\,902{,}55$✓A The claim is NOT valid✓O **OR** ✓M ✓M Interest = (R39 110,05 – 1207.50) – R30 000 = R7 905,55✓A The claim is NOT valid✓O	1M multiplying 1M adding 1M subtracting 1A correct answer 1O conclusion **OR** 1M multiplying 1M adding 1M subtracting 1A correct answer 1O conclusion (5)	F L4
2.3.1	✓M 2021 Price $= R229{,}99 \div 105{,}73\%$✓M $= R217{,}53$✓A **OR** 2021 Price $= R229{,}99 \times \frac{100\text{✓M}}{105{,}73\text{✓M}}$ $= R217{,}53$✓A	1M dividing 1M for dividing by 105,73% 1A answer **OR** 1M for multiplying by 100 1M for 105,73 1A answer (3)	F L2
2.3.2	Price for 2022 $= R229{,}99$ Price for 2023 $= R229{,}99 \times 104{,}65\%$✓M $= R240{,}68$✓A Price for 2024 $= R240{,}68 \times 104{,}6\%$✓M $= R251{,}75$✓CA **OR** ✓M 2023 Increase $= 4{,}65\% \times R229{,}99$ $= R10{,}69$ Price for 2023: $R229{,}99 + R10{,}69 = R240{,}68$✓A 2024 Increase $= 4{,}6\% \times R240{,}68$ $= R11{,}07$✓M Price for 2024 $= R240{,}68 + R11{,}07$ $= R251{,}75$✓CA	1M multiplying by 104.65% 1A answer 1M multiplying by 104.6% 1CA answer **OR** 1M multiplying by 4.65% 1A answer 1M multiplying by 4.6% 1CA answer (4)	F L3
		[30]	

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QUESTION 3 [25MARKS]

QUE	Solution	Explanation	T &L
3.1.1	Monthly taxable income = R35 700 – (R35 700 × 7.5%)✓MA = R33 022,50✓A Annual taxable income = R33 022,50 × 12 ✓MA = R396 270✓A	1MA subtracting 7,5% 1A correct answer 1MA multiplying by 12 1A correct value (4)	F L2
3.1.2	Annual Tax ✓SF ✓M ✓MCA ✓SF ✓MA =[73 726 + (31% (396 270 - R353 000)] – 16 425 – (815 ×12) =R60 934,70✓CA	**CA from 3.1.1** 1SF annual taxable income 1M multiplying by 31% 1MCA subtracting values 1SF rebate 1MA subtracting medical credit for the year 1CA answer (6)	F L3
3.1.3	Monthly tax = R60 934,70 ÷ 12 ✓MCA = R5 077.89 ✓CA	**CA from 3.1.2** 1MCA dividing by 12 1CA answer (2)	F L2
3.2.1	1 564 000 000 000✓✓A	2A correct answer (2)	F L2
*3.2.2	Difference =R 1 564 000 000 000 – 1 563 765 000 000✓✓MCA =R235 000 000✓CA	2MCA subtracting correct values 1CA answer (3)	F L2
3.2.3	✓MA % Change = $\frac{1\,249\,753-1\,355\,781}{1\,355\,781\checkmark MA} \times 100\ \%\checkmark M$ = - 7,82 %✓CA	1MA subtracting correct values 1MA dividing by 1 355 781 1M multiply by 100% 1CA answer (4)	F L2
3.2.4	✓MA ✓MA Value added tax = (448 782 + 204 332) – 262 417 = 390 697	1MA adding correct values 1MA subtracting 262 417 (2)	F L2
*3.2.5	323 577: 555 780✓✓RT	2RT correct values and order (2)	F L2
			[25]

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QUESTION 4 [25 MARKS]			
QUE	**Solution**	**Explanation**	**T &L**
4.1.1	Percentage $= \frac{\text{403 606}}{\text{972 255}} \times 100\%$ ✓RT ✓RT ✓M 41,51 %✓CA	1RT correct value 1RT dividing by correct value 1M multiply by 100% 1CA answer (4)	DH L2
4.1.2	Median = 73.2; 76.5; 76.5; 80.3; 81.3; 82.3; 86.8; 87.2; 88.4✓A = KwaZulu Natal✓A	1A arranging values 1A correct answer (2) **AO**	DH L2
*4.1.3	Mean = (48 331 + 22 602 + 85 342 +95 017 + 51 855 + 34 995 + 6 990 + 23 272 + 41 502) ÷ 9✓✓M = 45 545,1 = 45 545✓CA	2M adding correct values 1M dividing by 9 1CA answer (4)	DH L2
4.1.4	Median✓ A Data set has an outlier of 6 990. ✓✓O	1A Correct answer 2O opinion (3)	DH L4
4.2.1	Difference = 67 – 66✓✓RG = 1 inch ✓CA	2RG subtracting correct values 1CA answer (3)	DH L4
4.2.2	IQR = 69 – 66 ✓RG✓SF = 3 ✓CA	1RG correct values 1SF substitution 1CA answer (3)	DH L3

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4.2.3	Q_1 of girls = 66 ✓RG Q_2 of boys = 66✓RG The statement is CORRECT. ✓O	1RG correct value 1RG correct value 1O opinion (3)	DH L2
4.3.1	P(Girl swimming) = $\frac{5}{16}$ ✓A ✓A = 0,3125✓CA	1A for numerator 1A for denominator 1CA correct answer (3) **NPR**	
			[25]
		TOTAL MARKS:	**100**

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NOTES:

- 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.

1.1.4	VAT = R253,46 × 15% = R38,02	Full marks
1.2.5	Accept 0,778 **OR** 77,8%	Full marks **NPR**
3.2.2	Accept R235 million	Full marks
3.2.5	323 577: 555 780 1:1,71	Full marks
4.1.3	Mean = 4 03 606 ÷ 9 = 44 845,11 = 44 845	Full marks

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