



**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**JUNE 2021**

**MATHEMATICAL LITERACY P1  
MARKING GUIDELINE  
(EXEMPLAR)**

**MARKS: 100**

<b>Symbol</b>	<b>Explanation</b>
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RM	Reading from a table/Reading from a graph/Reading from a map
F	Choosing the correct formula
SF	Substitution in a formula
J	Justification
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding Off/Reason
AO	Answer only
NPR	No penalty for rounding

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This marking guideline consists of 11 pages.

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**MARKING GUIDELINE****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 incorrect item presented.

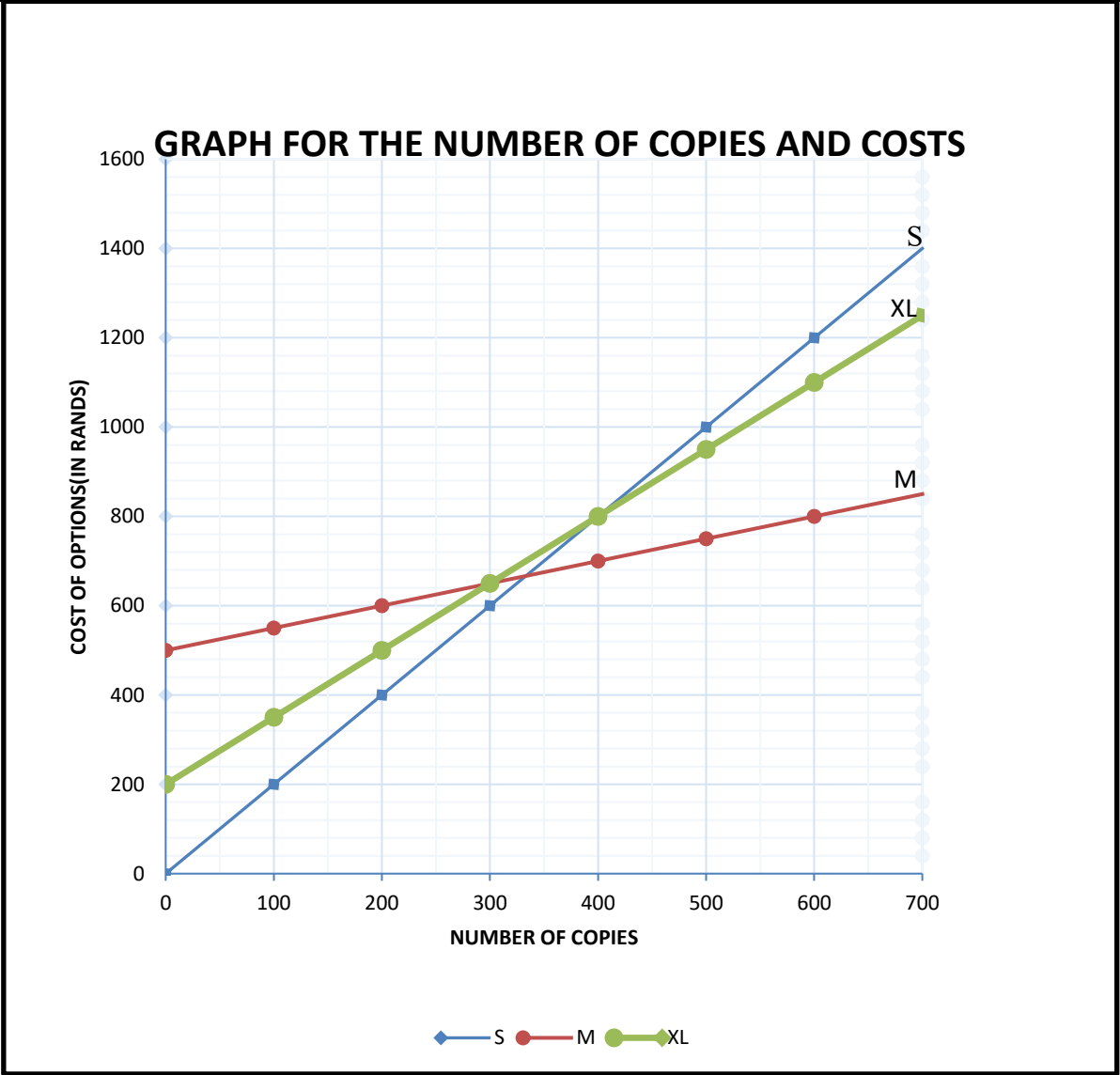
***LET WEL:***

- *As 'n kandidaat 'n vraag TWEE keer beantwoord, merk slegs die EERSTE poging.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyn toegepas, maar dit hou by die tweede berekeningsfout op.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra verkeerde item.*

<b>QUESTION 1 [20 MARKS] INTEGRATED QUESTION</b>				
<b>Question</b>		<b>Solution</b>	<b>Explanation/Marks AO: FULL MARKS</b>	<b>Topic/L</b>
1.1	1.1.1	VAT inclusive price means the price that has added VAT value ✓✓ J	2A justification (2)	F L1
	1.1.2	$\% \text{ Profit} = \frac{0,30}{0,70} \times 100 = 42,86\% \checkmark \text{CA}$	1M subtraction for profit 1M division and multiplication by 100 1CA (2)	F L1
	1.1.3	Joy's profit = $2 \times 50 \times 0,30 \checkmark \text{RT}$ = R 30,00 ✓CA	1 RT correct values 1CA answer. (2)	F L1
1.2	1.2.1	$\text{Rate} = R \frac{96,61}{100} \checkmark \text{C}$ $= R0,9661 \text{ per kWh } \checkmark \text{CA}$	1C Conversion 1CA rate (2)	F L1
	1.2.2	$\text{Total amount} = 96,61 \times 50$ $= 4830,5 \text{ cents } \checkmark \text{M}$ $= \frac{4830,5}{100}$ $= R48,30 \checkmark \text{CA}$ <b>OR</b> $\text{Total amount} = R 0,9661 \times 50 \checkmark \text{M}$ $= R48,30 \checkmark \text{CA}$ <b>NPR</b>	1M multiply by 50 1CA amount 1M multiply by 50 1CA amount (2)	F L1
	1.2.3	$\text{Maximum kWh} = 400 - 50 \checkmark \text{M}$ $= 350 \text{ kWh } \checkmark \text{CA}$	1M subtracting 50 1CA maximum number (2)	F L1
1.3	1.3.1	$\% \text{ of energy produced by Others}$ $= 100\% - (85,7+5,2+3,2+1,7+0,9+0,9) \checkmark \text{M}$ $= 2,4\% \checkmark \text{CA}$	1M subtracting from 100% all values 1CA simplifying. (2)	D L1
	1.3.2	$\text{Natural Gas} = \frac{3,2}{85,7} \times 237,006 \checkmark \text{M}$ $= 8,85 \text{ GWh } \checkmark \text{CA}$	1M dividing correct values 1CA simplification and answer <b>NPR</b> (2)	D L1

	1.3.3	Nuclear: Diesel 5,2 : 1,7 ✓RT ✓A	1RT correct values 1S simplification (2)	D L1
	1.3.4	Production from coal = 1 000 000 × 237,006 ✓ ✓RT M = 237 006 000 KWh ✓	1 RT production 1M multiplication by 1 000 000 1CA answer (3)	D L1
				<b>[21]</b>

QUESTION 2 [27 MARKS] FINANCE				
Question	Solution		Explanation/Marks	T/L
2.1	2.1.1	Number of copies ✓✓2A	2A number of copies (2)	F L1
	2.1.2	ANNEXURE C: GRAPH		



1 mark for starting point (0;500)  
1 mark any other correct point plotted correctly  
1mark for the straight line

(3) F  
L2

	2.1.3	400 copies ✓✓RT	2RT (2)	F L2
	2.1.4	From graph for 600 copies:  on Option S cost= R1200 ✓RT on Option M cost= R800 ✓RT difference in cost = 1200-800= R400 ✓A  <b>OR</b>  For S= 600 × 2 = R1 200 ✓M For M = 500 + 600 × 0,50 = R800 ✓M Difference= 1 200 – 800 = R400✓CA	1RT for value of S 1RT for value of M 1A the difference R400   1M for R1200 1M for R800 1A for R400  (3)	F L3
2.2	2.2.1	7 512 788 + 368 182 ✓ = 7 880 970 ✓  % difference in Energy  $= \frac{8\,145\,975 - 7\,880\,970}{7\,880\,970} \times 100\% \checkmark \text{SF}$  $= \frac{265\,005}{7\,880\,970} \times 100\%$  = 3,36% ✓S  = 3%✓R	1M adding 368182 1CA answer  1 SF substitution of correct values  1S simplification  1R  (5)	F L3
	2.2.2	Increase= 0,185 × 8 382 673 ✓M = 1 550 794,505 ✓S Projected income = 8 382 673 + 1 550 794,505✓M = R9 933 476,505 = R 9 933 476,51 ✓CA  <b>OR</b>  Projected income = 1,185 ✓× 8 382 673 ✓M = R9 933 467,505 ✓S = R9 933 467,51 ✓ CA	1M multiplication by 0,185 1S simplification 1M addition  1CA answer  1M adding the increase 1M multiplication 1S simplification 1CA answer  (4)	F L3
	2.2.3	Probability = $\frac{4}{6}$ ✓ A = 0,6666 ✓ S	1A numerator 1A denominator. 1S simplified  (3)	F L2

2.3	<p>Deposit at ATM = <math>R4,80 + \frac{1,2}{100} \times 5000</math> ✓SF</p> <p style="text-align: center;"><math>= R64,80</math> ✓S</p> <p>Deposit at Branch = <math>R8,00 + \frac{1,5}{100} \times 5000</math></p> <p style="text-align: center;"><math>= R83,00</math> ✓CA</p> <p style="text-align: center;">Difference = <math>83,00 - 64,80</math> ✓M</p> <p style="text-align: center;"><math>= R18,20</math></p> <p>Statement valid. ✓ A</p>	<p>1SF substitution 1S simplification</p>  <p>1CA answer for branch deposit</p>  <p>1M subtraction 1CA answer</p> <p style="text-align: right;">(5)</p>	<p style="text-align: center;">F L4</p>
		<b>[27]</b>	

<b>QUESTION 3 [15 marks]</b>			
<b>Question</b>	<b>Solution</b>	<b>Explanation/Marks AO: FULL MARKS</b>	<b>Topic/L</b>
3.1	$43+21+149+72+34+20+32+11+83 \checkmark M$ $= 465 \checkmark CA$	1M addition 1CA answer (2)	D L1
3.2	149; 83; 72; 43; 34; 32; 21; 20; 11 $\checkmark RT \checkmark A$	1RT reading all the values 1A correct order (2)	D L1
3.3	20:40 $\checkmark RT \checkmark RT$ $= 1:2 \checkmark CA$	1RT for 20 1RT for 40 1CA answer in simplified ratio (3)	D L2
3.4	$675 - (30 + 175 + 19 + 17 + 140 + 182 + 12 + 40) \checkmark M$ $= 60 \checkmark CA$	1M addition 1CA answer (2)	D L1
3.5	Total schools in NW = $32+182$ $= 214 \checkmark M$  Total schools in SA = $465+675$ $= 1140 \checkmark CA$  % age = $\frac{214}{1140} \times 100\% \checkmark M$  $= 18,77\% \checkmark CA$	1M addition and total schools in NW  1CA total schools in SA adding the value from <b>3.1 and 675</b>  1M multiplication; a fraction and 100% 1CA answer (4)	D L3
3.6	Median = 34 $\checkmark RT$ The province is Limpopo $\checkmark CA$	1RT median value 1CA province (2)	D L2
		<b>[15]</b>	



QUESTION 4 [23 marks]			
Ques.	Solution	Explanation	Level
4.1	Value of A = $222 - 121 \checkmark MA$ $\checkmark A$ $= 101$  Value of B = $123 - 59$ $= 64 \checkmark A$  <b>OR</b>  Value of B = $406 - 121 - 103 - 76 - 42$ $= 64 \checkmark A$  Value of C = $222 + 103 + 95 + 154 + 123 + 75 \checkmark M$ $= 772 \checkmark CA$  <b>OR</b>  Value of C $= 121 + 101 + 103 + 95 + 76 + 78 + 64 + 59 + 42 + 33 \checkmark MCA$ $= 772 \checkmark CA$	1MA Subtract correct values 1A Value of A  1A Value of B  1M Adding ALL values 1CA Value of C  1MCA Adding ALL values <b>CA from A and B</b> 1CA Value of C (5)	D L2
4.2	Trend – From Grade 8 to Grade 12 the number of male learners decreases $\checkmark \checkmark A$  Reason – Male learners drop out. $\checkmark \checkmark A$  <b>OR</b>  Male learners fail the grades $\checkmark \checkmark A$  <b>Accept any other relevant reason</b>	<b>CA from 4.1.1</b> 2A Trend  2A Reason  (4)	L4 D
4.3	No of teachers = $\frac{772}{35} \checkmark A$ $= 22,057... \checkmark S$ $\approx 22 \checkmark CA$ Statement not valid $\checkmark O$	<b>CA from 4.1</b> 1M Dividing by 35 1S Simplification 1CA No of teachers 1O Not valid (4)	L4 D
4.4	Probability (Grade 8 or Grade 9 female) = $\frac{121+103}{772} \times 100\%$ $= \frac{224}{772} \checkmark A$ $= \frac{224}{772} \checkmark MCA$  $= 29\% \checkmark CA$	<b>CA from 4.1</b> 1A Numerator 1MCA Denominator 1CA Percentage (3)  <b>NPR</b>	L2 P

4.5	<p>No of learners in 2019 = <math>772 \times 1,03</math>  <math>= 796 \checkmark CA</math></p> <p>Term 1 = <math>796 \times 3,18 \times 51 \checkmark MCA</math>  <math>= R129\,095,28 \checkmark CA</math></p> <p>Term 2 = <math>796 \times 3,18 \times 46</math>  <math>= R116\,438,88 \checkmark CA</math></p> <p>Total Amount = <math>R129\,095,28 + R116\,438,88 \checkmark CA</math>  <math>= R245\,534,16 \checkmark CA</math></p> <p>Statement is valid <math>\checkmark O</math></p>	<p><b>CA from 4.1.1</b>  1MCA Increasing value from 2.1.1 by 3%  1CA No of learners  1MCA Multiply by 3,18 and 51  1CA Amount for Term 1  1MA Amount by using 46 days  1CA Total amount  1O Statement is valid (7)</p>	F L4
		<b>[23]</b>	

QUESTION 5 [15 marks]			
5.1	$R43\,500 \times 12 \quad \checkmark M$ $= R522\,000 \quad \checkmark CA$	1M multiply by 12 1CA annual income (2)	F L2
5.2	Pension Fund = $R43\,500 \times 7,5\%$ $= R3\,262,50 \quad \checkmark CA$ $= R3\,262,50 \times 12$ $= R39\,150 \quad \checkmark CA$  Taxable Income = $R522\,000 - R39\,150$ $= R482\,850 \quad \checkmark CA$ $R482\,850 = 110\,739 + (482\,850 - 467\,500) \times 36\%$ $= 110\,739 + 5526$ $= 116\,265 - 15\,714 \quad \checkmark CA$ $= \underline{100\,551}$ $\frac{12}{12}$ $= 8379,25 - 888 \quad \checkmark M$  $= 7\,491,25 \quad \checkmark CA$	1CA pension value  1CA annual pension fund  1CA subtracting Pension Fund  1CA subtracting rebate  1M subtracting MTC 1CA monthly tax (6)	F L3
5.3	$\checkmark A$ 95, 98, 99, <b>100</b> , 101, 101, 102, <b>103</b> , 105, 107, 110, <b>111</b> , 114, 115, 121  103 is the median $\checkmark CA$	1A arrangement  1CA median (2)	D L2
5.4	$Q1 = 100 \quad \checkmark CA$ $Q2 = 103 \quad \checkmark CA$ $Q3 = 111 \quad \checkmark CA$  $IQR = 111 - 100 \quad \checkmark M$ $= 11 \quad \checkmark CA$	1CA Q1 1CA Q2 1CA Q3  1M subtraction 1CA IQR (5)	D L2
		<b>[15]</b>	
<b>TOTAL:</b>		<b>100</b>	