



education

Lefapha la Thuto la Bokone Bophirima
Noordwes Departement van Onderwys
North West Department of Education
NORTH WEST PROVINCE

GRADE 12

**MATHEMATICAL LITERACY P1/
WISKUNDIGE GELETTERDHEID VI**

SEPTEMBER 2021

MARKING GUIDELINES/NASIENRIGLYNE

MARKS/PUNTE: 150

Symbol/Kode	Explanation/Verduideliking
M	Method/Metode
MA	Method with accuracy/Metode met akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	simplification/Vereenvoudiging
RT/RG	Read from table/graph/document/diagram/Lees vanaf tabel/grafiek/document/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.
R	Rounding off/Afronding
NPR	No penalty for rounding/Geen penalisasie vir afronding nie
AO	Answer only/Slegs antwoord
MCA	Method with consistent accuracy/Metode met volgehoue akkuraatheid
RCA	Rounding with consistent accuracy/Afronding met volgehoue akkuraatheid

Vjku" o ctmkpi "iwkfgnkpg"eqpukuvu"qh"34"rcigulJkgtfkg"pcukgptkin{pg"dguvccp"wkv"34"dnclf{g0

PQVG<

- 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. NO CA MARK AFTER A BREAKDOWN.
- If the candidate presents any extra solution when reading from a graph, table , layout plan and map, then penalize for every extra item presented.
- The general principle of marking is that if a candidate makes one mistake and there is sound mathematics thereafter, the candidate loses one mark.

LET WEL:

- As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.
- As 'n kandidaat 'n antwoord van die 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 by die tweede berekeningsfout op. GEEN CA PUNT NA FOUTIEWE BEWERKING.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.
- Die algemene beginsel van merk is as 'n leerder een fout maak verloor die leerder een punt.

QUESTION/VRAAG 1 [30 MARKS/PUNTE] AO			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	✓MA $A = 5 \times 9 = R45$ ✓A	1MA divide by 9 1A answer (2)	F L1
1.1.2	✓MA $B = 12 \div 0,50 = R24$ ✓A	1MA dividing by 0.50 1A answer (2)	F L1
1.1.3	$C = 5 + 1 + 0,50 + 0,25 + 8$ ✓MA $= R14,75$ ✓A	1MA adding correct values 1A answer (2)	F L1
1.1.4	✓M ✓M $R35,00 \times 580$ R20 300 ✓CA	1M correct value 1M multiply by 580 1CA Simplification (3)	F L1

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T&L
1.2.5	<p>Percentage recoveries/ <i>Persentasie herstel</i></p> $B = \frac{9\,053}{23\,273} \times 100\% \checkmark MA$ $= 38,9\% \checkmark A$ <p>OR/OF</p>	<p>1MA correct values divided and multiplied by 100%</p> <p>1A answer</p> <p>OR/OF</p>	D L1
1.2.6	$B = 100 - (24,65 + 27,9 + 4,62 + 1,11 + 0,64 + 0,95 + 0,85 + 0,38) \checkmark M$ $= 100 - 61,10$ $= 38,9\% \checkmark A$	<p>1M subtracting percentages from 100</p> <p>1A answer</p>	(2)
	3 383 ✓✓A	2A answer	D L1
			(2)
			[30]

QUESTION/VRAAG 2 [44 MARKS/PUNTE]

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T&L
2.1.1	Yen ✓✓A	2A answer	F L1
(2)			
2.1.2	Two hundred and ninety-two million three hundred and eighteen thousand four hundred and sixty rand/	2A answer	F L1
	<i>Twee honderd twee en negentig miljoen</i>		
	<i>driehonderd en agtien duisend en vier honderd en</i>		
	<i>sestig rand ✓✓A</i>		
(2)			
2.1.3	To have a more accurate value, especially when it is	2A answer	F L1
	a large amount of money/ <i>Om 'n meer akkurate</i>		
	<i>waarde te bereken veral as dit 'n groot bedrag</i>		
	<i>is✓✓A</i>		
(2)			
2.1.4	Amount to be spent on ventilators/ <i>Bedrag nodig</i>		F L2
	<i>om op ventilators te spandeer</i>		
	✓M		
	R292 318 460 × $\frac{4}{7}$ ✓MA		
	= R167 039 120 ✓CA		
	1M correct values		
	1MA multiplying with $\frac{4}{7}$		
	1CA answer		

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T&L
2.2.2	<p>New price in 2023/<i>Nuwe prys in 2023</i> $8583,59 \text{ €} \times 109,63\% \checkmark M$ $= 9\ 410,189717 \checkmark A$</p> <p>$9\ 410,189717 \times 109,63\% \checkmark M$ $= 10\ 316,39099 \text{ €}$ $\approx 10\ 316,39 \text{ €} \checkmark A$</p> <p style="text-align: center;">OR/OF</p> <p>$8583,59 \text{ €} \times 9,63\% \checkmark M$ $= 826,599717$ $826,599717 + 8583,59 \text{ €} \checkmark MA$ $= 9\ 410,189717$</p> <p>$9\ 410,189717 \times 9,63\% \checkmark M$ $= 906,2012697$ $906,2012697 + 9\ 410,189717$ $\approx 10\ 316,39 \text{ €} \checkmark A$</p>	<p>1M multiplying by 109,63% 1A simplification</p> <p>1M multiplying new value by 109,63%</p> <p>1A answer rounded to 2 decimals</p> <p>1M multiplying by 9,63%</p> <p>1MA adding to principal amount</p> <p>1M multiplying new value by 9,63%</p> <p>1A answer rounded to 2 decimals (4)</p>	F L2
2.3.1	<p style="text-align: center;">✓MA</p> <p>$R1\ 202\ 050 + R1\ 203\ 708 + R1\ 198\ 236 \checkmark RT$ $= R3\ 603\ 994 \checkmark CA$</p>	<p>1RT correct values 1MA adding the correct values 1CA answer (3)</p>	F L1
2.3.2	<p style="text-align: center;">✓MA</p> <p>$R16\ 580 \div 10 = R1\ 658 \checkmark A$ $R1\ 658 \times 736 \checkmark MA$</p>	<p>1MA divided by 10 1A answer 1MA multiplying by 736 (3)</p>	F L2
2.3.3	<p>Percentage difference/<i>Persentasie verskil</i> ✓RT</p> $= \frac{R11\ 507\ 508 - R11\ 943\ 582}{R11\ 943\ 582} \times 100\% \checkmark MA$ $= -3,65\% \checkmark A$	<p>1RT correct values 1MA multiplying by 100 1A negative answer (3)</p>	F L2
2.3.4	<p>$R1\ 658 \times 7\ 275 \checkmark MCA$ $= R12\ 061\ 950 \checkmark S$ $R12\ 061\ 950 - R11\ 507\ 508 \checkmark MA$ $= R554\ 442 \checkmark A$</p>	<p>CA from Q 2.3.2 1MCA multiplying correct values 1S simplification 1MA subtracting correct value from R12 061 950 1A answer (4)</p>	F L2

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T&L
2.3.5	<p>Predicted amount/<i>Voorspelde bedrag</i> $R1\ 658 \times 721$ $= R1\ 195\ 418 \checkmark A$</p> <p>Percentage received/<i>Persentasie ontvang</i> $\checkmark MA$ $\frac{1\ 061\ 531}{1\ 195\ 418} \times 100\% \checkmark MA$ $= 88,79998\% \approx 88,8\% \checkmark A$</p> <p>Percentage less received/<i>Persentasie minder ontvang</i> $100\% - 88,8\% = 11,2\% \checkmark A$ $\checkmark CA$</p> <p>Her prediction was incorrect, they received 11,2% less/<i>Haar voorspelling is verkeerd, hulle ontvang 11,2% minder</i></p>	<p>1A amount predicted</p> <p>1MA dividing actual amount with predicted amount 1MA multiplied by 100% 1A answer</p> <p>1A percentage NOT received</p> <p>1CA conclusion</p>	F L4
2.3.6	<p>$\checkmark \checkmark A$</p> <p>In 2020 the number of learners decreased due to covid-19 pandemic where many parents lost their jobs or received less income and could not pay school fees and/or some of the learners left school and started home schooling. $\checkmark \checkmark R$</p> <p>$\checkmark \checkmark A$</p> <p><i>In 2020 het die getal leerlinge afgeneem agt die covid-19 pandemie waar baie ouers hulle werk veloor het asook leerlinge wat skool verlaat het om huis studie te doen.</i> $\checkmark \checkmark R$</p> <p>Any other relevant answer/ <i>Enige ander relevante antwoord</i></p>	<p>2A decreasing in 2020 2A reason</p> <p>(4)</p>	F L4

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.2.4	35,4 ; 36 ; 37,5 ; 37,5 ; 37,7 ; 38 ; 38,3 ✓MA Median: 37,5✓CA	1MA sort data in order 1A answer (2)	D L2
3.2.5	A - 36,4 = 2,7 ✓MA A = 36,4 + 2,7 ✓MA A = 39,1 ✓A	1A concept of range 1A adding values 1A answer AO (3)	D L3
3.2.6	✓MA Mean = $\frac{37,2 + 37,5 + B + 38,9 + 38,6 + B + 37,1}{7}$ = 37,87 $\frac{2B + 189,3}{7} = 37,87$ 2B + 189,3 = 37,87 × 7✓MA 2B + 189,3 = 265,09 2B = 265,09 - 189,3 ✓MA 2B = 75,79 ✓MA B = 37,895 B ≈ 37,9 ✓CA	1MA concept of mean 1MA multiplying with 7 both sides 1MA subtracting 189,3 1MA dividing by 2 1CA answer to 1 decimal (5)	D L3
3.2.7	The learner is absent from the school/ <i>Die leerling is afwesig van die skool</i> ✓✓A OR/OF The learner probably is in isolation at home. Last temperature is very high/ <i>Die leerling is heel moontlik in isolasie tuis agt hoe temperatuur.</i> ✓✓A	2A answer (2)	D L4
3.2.8	$\frac{3}{9} \checkmark A = \frac{1}{3} \checkmark A$	1A fraction 1A simplest form (2)	P L2
3.2.9	✓A $\frac{4}{7} \times 100 \checkmark A$ = 57,14 ≈ 57 ✓CA	1A correct fraction 1A multiplied by 100 1CA answer correctly rounded (3)	P L2
3.2.10	The percentage and fraction are easier to visualize compared to decimal/ <i>Die persentasie en breuk is makliker herkenbaar in vergelyking met desimale.</i> ✓✓A	2O opinion that is relevant and true (2)	P L4
			[39]

QUESTION/VRAAG 4 [37 MARKS/PUNTE]

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L																														
4.1.1	<p style="text-align: center;">COST OF LIVING WITH PERCENTAGES</p> <table border="1"> <caption>COST OF LIVING / LEWENSKOSTE</caption> <thead> <tr> <th>Expense</th> <th>Percentage (%)</th> <th>Mark</th> </tr> </thead> <tbody> <tr> <td>Transportation</td> <td>16.5%</td> <td>✓A</td> </tr> <tr> <td>Food</td> <td>14%</td> <td></td> </tr> <tr> <td>Housing</td> <td>35%</td> <td>✓A</td> </tr> <tr> <td>Dept payments</td> <td>10%</td> <td>✓A</td> </tr> <tr> <td>Personal & discretionary</td> <td>6%</td> <td>✓</td> </tr> <tr> <td>Savings</td> <td>6.50%</td> <td>✓A</td> </tr> <tr> <td>Utilities</td> <td>5%</td> <td></td> </tr> <tr> <td>Medical</td> <td>3%</td> <td></td> </tr> <tr> <td>Outing</td> <td>4%</td> <td>✓A</td> </tr> </tbody> </table>	Expense	Percentage (%)	Mark	Transportation	16.5%	✓A	Food	14%		Housing	35%	✓A	Dept payments	10%	✓A	Personal & discretionary	6%	✓	Savings	6.50%	✓A	Utilities	5%		Medical	3%		Outing	4%	✓A		F L2
Expense	Percentage (%)	Mark																															
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Utilities	5%																																
Medical	3%																																
Outing	4%	✓A																															
	<p>1A Transport & food /Vervoer en voedsel 1A Housing and Dept payments / Behuising en departementele betalings 1A Personal & Discretionary and Savings / Persoonlik en diskresionêr 1A Utilities, Medical and outing / Nutsdienste, medies en uitstappies 1A Labelling the x-axis / Benoeming van x-as 1A Histogram (no spaces between bars / Geen spasie tussen kolomme</p>	(6)																															
4.1.2	<p>Salary per month/Salaris per maand $\text{Salary}/\text{Salaris} \times 35\% = \text{R}9\ 782,50 \checkmark\text{MA}$ $\text{Salary}/\text{Salaris} = \text{R}9\ 782,50 \div 35\% \checkmark\text{M}$ $\text{Salary}/\text{Salaris} = \text{R}27\ 950 \checkmark\text{A}$</p>	<p>1MA correct equation 1M dividing by 35% 1A answer</p>	F L3 (3)																														
4.2.1	<p>Plant management/Aanlegbestuurder $\checkmark\text{A}$ $\text{R}70\ 286 \checkmark\text{A}$</p>	<p>1A answer occupation 1A answer salary</p>	F L1 (2)																														
4.2.2	R39 286 $\checkmark\text{A}$	1A answer	F L1 (2)																														
4.2.3	$\checkmark\text{MA}$ $\text{R}79\ 002 - \text{R}54\ 435 \checkmark\text{MA}$ $= \text{R}24\ 567 \checkmark\text{A}$	<p>1MA correct values 1MA subtracting correct values 1A answer</p>	F L1 (3)																														

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T&L
4.2.4	R48 875 \times 12 ✓MA = R586 764 ✓A Statement not correct/ Bewering nie korrek ✓O	1MA multiplying by 12 1A answer 1O conclusion (3)	F L2
4.3.1	Annual salary/ <i>Jaarlikse salaris</i> R78 264 \times 12 ✓MA = R939 168 ✓A	1MA Multiplying correct salary by 12 1A answer (2)	F L1
4.3.2	R708 311 and above ✓✓A	2A answer (Accept 708 311 – 1 500 000) (2)	F L1
4.3.3	South African Revenue Service/ <i>Suid Afrikaanse Inkomste dienste</i> ✓✓A	2A answer (2)	F L1
4.3.4	Medical tax crediet/ <i>Mediese belasting krediet</i> ✓MA $(2 \times R310) + (3 \times R209)$ ✓MA R620 + R627 = R1 247 ✓A R1 247 \times 12 = R14 964 ✓A	1MA multiplying 310 by 2 1MA multiplying 209 by 3 1A answer for adding 2 values 1A answer (4)	F L3
4.3.5	Monthly tax payable/ <i>Maandelikse belasting betaalbaar</i> R78 264 \times 108% = R84 525,12 ✓MA R84 525,12 – R6 339,38 (7,5% pension) ✓MCA = R78 185,74 R78 185,74 \times 12 = R938 228,88 (annual taxable income) ✓MCA Bracket 6/ <i>Kategorie 6</i> = 207 448 + 41% (938 228,88 – 708 310) ✓MCA = 207 448 + 41% (229 918,88) = 207 448 + 94 266,74 ✓CA = 301 714,74 – 14 220 – (1 247 \times 12) Medical aid ✓MA = 301 714,74 – 14 220 – 14 964 ✓MCA = R272 530,74 \div 12 = R22 710,90 ✓CA	1MA multiplying correct value with 108% 1MCA correct pension value subtracted 1MCA multiplying taxable income with 12 1MCA substitution of taxable income into bracket 6 1CA simplifying 1MA subtracting correct tax rebate 1MCA from 3.3.4 medical aid subtracted 1CA monthly tax deductible (8)	F L3
		[37]	TOTAL: 150

TAXONOMY LEVELS: MATHEMATICAL LITERACY PAPER 1								
September 2021								
QUESTION	Finance	Data Handling	Probability	TL 1	TL 2	TL 3	TL 4	Total
1.1.1	2			2				
1.1.2	2			2				
1.1.3	2			3				
1.1.4	3			2				
1.1.5	3			3				
1.1.6	2			2				
1.1.7	3			3				
1.2.1		2		2				
1.2.2		2		2				
1.2.3		3		3				
1.2.4		2		2				
1.2.5		2		2				
1.2.6		2		2				
TOTAL QUESTION 1	17	13		30				30
2.1.1	2			2				
2.1.2	2				2			
2.1.3	2					2		
2.1.4	3				3			
2.2.1	8						8	
2.2.2	4					4		
2.3.1	3			3				
2.3.2	3				3			
2.3.3	3				3			
2.3.4	4				4			
2.3.5	6						6	
2.3.6	4						4	
TOTAL QUESTION 2	44			5	15	6	18	44

QUESTION	Finance	Data Handling	Probability	TL 1	TL 2	TL 3	TL 4	Total
3.1.1		4			4			
3.1.2		6				6		
3.1.3		4					4	
3.2.1		2			2			
3.2.2		2		2				
3.2.3		2			2			
3.2.4		2			2			
3.2.5		3				3		
3.2.6		5				5		
3.2.7		2					2	
3.2.8			2		2			
3.2.9			3		3			
3.2.10			2				2	
TOTAL QUESTION 3		32	7	2	10	14	6	39
4.1.1		6			6			
4.1.2		3				3		
4.1.1	2			2				
4.2.2	2			2				
4.2.3	3				3			
4.2.4	3						3	
4.3.1	2			2				
4.3.2	2				2			
4.3.3	2			2				
4.3.4	4				4			
4.3.5	8					8		
TOTAL QUESTION 4	28	9		8	20	11	5	37
TOTAL	89	54	7	45	45	31	29	
%	59.3%	36%	4.7%	30%	30%	20.7%	19.3%	
EXAM GUIDELINE	90	52.5	7.5	45	45	30	30	
%	60%	35%	5%	30%	30%	20%	20%	