education

MPUMALANGA PROVINCE

REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

NASIONALE SENIOR SERTIFIKAAT

GRADE / *GRAAD* 12

MATHEMATICAL LITERACY P1 / *WISKUNDIGE GELETTERDHEID V1*

JUNE / JUNIE 2024

MARKING GUIDELINES / *NASIENRIGLYNE*



MARKS/PUNTE: 100

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	Reading from the table/graph/map/diagram/document *Lees vanaf tabel/grafiek/kaart/diagram/document*
SF	Correct substitution in a formula/*Korrekte vervanging in 'n formule*
O	Opinion/Example/Explanation/*Opinie/Voorbeeld/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 constant accuracy/*Metode met volgehoue akkuraatheid*

These marking guidelines consist of 11 pages.

Hierdie nasienriglyn bestaan uit 11 bladsye.

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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.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake one mark is deducted.
- A conclusion mark can only be given if relevant calculations precede it.
- No penalty for rounding (NPR) if the first decimal is correct.

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 nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem het en ekstra antwoorde gee, penaliseer vir elke ekstra verkeerde item.*
- *Afronding tel as `n afsonderlike punt.*
- *Die algemene beginsel van merk as `n leeder een fout maak, word een punt afgetrek.*
- *`n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.*
- *Geen penalisering vir ronding (NPR) as die eerste desimaal korrek is nie.*

QUESTION/*VRAAG* 1 [30 MARKS/*PUNTE*] ANSWER ONLY–FULL MARKS/*SLEGS ANTWOORD - VOLPUNTE*

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
1.1.1	Continuous/*Kontinue* ✓✓A	2A name of company (2)	D L1 E
1.1.2	3,8 3.9 4,8 4,81 5,51 5,59 6,5 ✓A	1A correct values 1A correct order (2)	D L1 E
1.1.3	Mode is the value of the newton metre that appears the most/*Modus is die waarde van newton meter wat die meeste voorkom* ✓✓A	2A correct definition in context (2)	D L1 E
1.1.4	165; 206; 221; 225; 235; 294; 310 ✓A Median/*Mediaan* = 225 ✓A	1A arranging values 1A median	D L1 E

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			(2)	
Q/*V*	**Solution/*Oplossing***		**Explanation/*Verduideliking***	**T/L**
1.1.5	21,20 ✓RT		2RT correct value (2)	D L1 E
1.1.6	Difference/*Verskil* $= 5,59 - 4,81$ ✓M $= 0,78$ ✓CA		1M subtracting correct values 1CA simplification (2)	D L1 E
1.1.7	✓RT 294 : 392 ✓A 0,75 : 1 ✓A		1RT correct value 1A correct order 1A unit ratio (3)	D L1 E
1.2.1	Three million six hundred and fourty four thousand three hundred and eighty seven rand. ✓✓A *Drie miljoen ses honderd vier en veertig duisend drie honderd sewe en tagtig rand.*		2A amount in words (2)	F L1 E
1.2.2	✓RT R155 791 – R30 575 – R42 224 – R49 504 ✓M R33 488 ✓CA **OR/*OF*** ✓RT R4 203 302 – R1 500 000 – R2 669 814 ✓M R33 488 ✓CA		1RT correct value 1M subtracting from the total 1CA amount **OR/*OF*** 1RT correct value 1M subtracting from the total 1CA amount (3)	F L1 E
1.2.3	$\frac{25}{100}$ ✓A ✓A $\frac{1}{4}$ ✓CA		1A numerator 1A denominator 1CA simplified fraction (3)	P L1 E
1.3.1	21,03 billion / *21,03 miljard*	✓✓A	2A correct amount in billions (2)	F L1 E
1.3.2	✓RT $\frac{3,170,701}{46,669,232} \times 100$ ✓M 6,7939858106 ✓CA		1RT correct values 1M percentage calculation 1CA simplification **NPR** (3)	F L1 M

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1.3.3	2022 ✓✓RT		2RT reading from the table (2)	F L1 E
			[30]	

QUESTION/*VRAAG* 2 [30 MARKS/*PUNTE*]

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.1.1	Discount amount/*Afslag bedrag* $= \frac{1,859}{100}$ ✓M × R301 259,00 ✓MA = R5 600,40 ✓A	1M percentage calculation 1MA multiplying amount 1A simplification (3)	F L2 E
2.1.2	Safety reason/as a safety feature - protect against thieves / hijackers /sunlight / ✓✓O *Veiligheids redes/ beskerm teen diewe en sonlig* Beautification of the car / reduce sunlight ✓✓O *Om die motor mooi te maak/ verminder sonlig* Longer lasting/*Hou langer* ✓✓O For insurance purposes / *Versekering doeleindes* ✓✓O	2O reason 2O reason 2O reason 2O reason (2)	F L4 M
2.1.3	VAT amount / *BTW bedrag* $= \frac{15\%}{115\%}$ ✓A × R366 577,45 ✓M = R47 814,45 ✓CA **OR/*OF*** VAT amount / *BTW bedrag* = R366 577,45 − $\frac{\text{R366 577,45}}{1,15}$ ✓MA ✓M = R366 577,45 − R318 763 = R47 814,45 ✓CA **OR/*OF***	1A multiplying by 15% 1M dividing by 115% 1CA VAT amount **OR/*OF*** 1MA dividing by 1,15 1M subtracting the amount without VAT 1CA VAT amount **OR/*OF***	F L2 M

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	VAT amount / *BTW bedrag* = R366 577,45 – R366 577,45 × $\frac{100}{115}$ ✓MA ✓M = R366 577,45 – R318 763 = R47 814,45✓CA	1MA multiplying by $\frac{100}{115}$ 1M subtracting the amount without VAT 1CA VAT amount (3)	
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1.4	Amount of interest at the end of first year / *Bedrag rente aan die einde van die eerste jaar* = 6,5% × R2 175 460 ✓MA = R141 404,90 ✓CA	1MA calculating interest 1CA simplification first year`s interest	F L3 D
	Amount of interest at the end of second year/ *Bedrag rente aan die einde van die tweede jaar* = 6,5% × (R2 175 460 + R141 404,90) ✓CA = R150 596,2185 ✓C	1CA second year`s interest 1C conversion to years	
	Interest rate for half year or 6 months *Rente koers vir halwe jaar of 6 maande* = 6,5% ÷ 2 = 3,25% ✓M	1M dividing % value by 2 (or the interest by 2)	
	Amount of interest at the end of half a year or 6 months / *Bedrag rente aan die einde van die halwe jaar of 6 maande.* ✓M = 3,25% × (R2 175 460 + R141 404,90 + R150 596,2185) = R80 192,48637 ✓CA	1M calculating interest third period 1CA last 6 months interest	
	Total interest earned/*Totale rente verdien* ✓M = R141 404,90 + R150 596,2185 + R80 192,4867 = R372 193,40 ✓CA	1M adding the interest values 1CA available amount	
	OR/*OF*	**OR /OF**	
	24 months = 2 years and 6 months **or** 2,5 years ✓C *24 maande = 2 jaar en 6 maande **of** 2,5 jaar*	1C conversion to years	
	Amount at the end of the first year /*Bedrag aan die einde van die eerste jaar* = R2 175 460 × 6,5% + R2 175 460 = R2 316 864,90✓CA	1CA 1st year value	

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	Amount at the end of the second year *Bedrag aan die einde van die tweede jaar* = R2 316 864,90 × 6,5% + R2 316 864,90 ✓MA = R2 467 461,119 ✓CA Amount at the end of half year or 6 months *Bedrag aan die einde van die halwe jaar of 6 maande* $= R2\ 467\ 461{,}119 \times \frac{6{,}5}{2}$ ✓M + R2 467 461,119 ✓MCA = R2 547 653,61 ✓CA Difference/*Verskil* = R2 547 653,61 – R2 175 460 ✓MA = R372 193,61 ✓CA **OR/*OF*** Amount of interest earned after 30 months *Bedrag rente verdien na 30 maande* = R2 175 460 × 1,065 × 1,065 × 1,0325 – R2 175 460 ✓✓M ✓M ✓✓CA ✓C = R2 547 653,61 – R2 175 460 ✓MCA ✓MA = R372 193,61 ✓CA	1MA calculating interest 1CA 2nd year value 1M dividing % value by 2 1MCA adding amounts 1CA last 6 months value 1MA subtracting the amounts 1CA available amount **OR/*OF*** 2M multiply the principal with 106,5 % 1M 2nd year value 2CA 6 months rate and value 1C conversion to years 1MCA simplification 1MA subtracting 1CA available amount (9)	
2.2.1	Accommodation / Akkommodasie = 3 × (2490 + 430 + 215) ✓M ✓MA = R9 405 ✓A Conservation fee / *Bewaringsfooi* = 3 days × R93 × 5 adults + 3 days × R47 ✓M ✓M Total cost = R9 405 + R1 536	1M multiplying by 3 1MA adding values 1A simplification 1M multiplying by 5 1M multiplying by R47 1M adding the two costs	F L4 M

Vasienriglyne

✓M

	= R 10 941 Samkelisiwe`s calculation is correct/ ✓O *Samkelisiwe se berekening is korrek*	1O conclusion (7)	
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.2.2	Total distance / *Totale afstand* = 725 km × 2 ✓ M = 1 450 km ✓A Number of litres / *Aantal liters* = (1 450 × 8) ÷ 100✓ C = 116,00 ✓CA Cost of trip / *Koste van die reis* = 116 × R16,79 ✓M = R1 947,64 ✓CA **OR/*OF*** Number of litres / *Aantal liters* = (725km × 8) ÷ 100✓ C = 58,00 ✓A Cost of a single trip /*Koste vir 'n enkel reis* = 58,00 × R16,79 ✓M = R973,32 ✓CA Cost of a return trip / *Koste vir 'n retoer reis* = R973,32 × 2 ✓M = R1 947,64✓CA	1M multiplying 725 km by 2 1A distance of 1 450km 1 C conversion 1CA number of litres 1M correct rate 1CA cost of trip **OR/*OF*** 1 C conversion 1A simplification 1M correct rate 1CA simplification 1M multiplying by 2 1CA cost of trip (6)	F L3 D
		[30]	

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QUESTION/*VRAAG* 3 [20 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
3.1.1	Kwazulu Natal ✓✓RT	2RT correct province (2)	D L1 E
3.1.2	**OR/*OF***		D
	Many people believe that Gauteng can provide job/business opportunities./*Baie mense dink dat Gauteng baie besighede en werksgeleenhede kan gee* ✓✓O	2O Explanation	L4 M
	OR/*OF*		
	Many people believe that Gauteng can provide a better life./*Baie mense dink dat Gauteng 'n beter lewe aanbied* ✓✓O	2O Explanation	
	OR/*OF*		
	Gauteng offers many universities for studying/*In Gauteng is daar meer universiteite vir studering* ✓✓O	2O Explanation	
	OR/*OF*		
	Gauteng is an economic hub/*Gauteng is 'n ekonomiese middelpunt* ✓✓O	2O Explanation (2)	

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3.1.3	✓RT **A** = 60 414 495 − 6 678 964 − 2 916 197 − 16 069092 − 11 518 288 − 5 887 980 − 4 109 533 − 1 282 845 − 7 219 826 ✓MA = 4 731 770 ✓CA **OR/*OF*** **A** = 60 414 495 − (6 678 964 + 2 916 197 ✓RT + 16 069092 + 11 518 288 + 5 887 980 + 4 109 533 + 1 282 845 + 7 219 826) = 60 414 495 − 55 682 725 ✓MA = 4 731 770 ✓CA **OR/*OF*** ✓MA **A** = $\frac{7,83}{100} \times 60\ 414\ 495$ = 4 730 454,96 ✓S = 4 730 454 ✓R		1RT correct values from the table 1MA subtracting from the total 1CA simplification **OR/*OF*** 1RT correct values from the table 1MA subtracting from the total 1CA simplification **OR/*OF*** 1MA multiplying with correct Percentage 1S simplification 1R rounding **Accept**: 4 730 455 (3)	D L2 M
3.1.4	The effects of rounding./*Invloed van afronding*	✓✓O	2O Explanation (2)	D L4 E
3.1.5	✓RT B = $\frac{11\ 518\ 288}{60\ 414\ 495} \times 100$ ✓M = 19,07% ✓CA		1RT correct values 1M calculating percentage 1CA simplification (3)	D L2 M

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3.1.6	✓MA $11,11 = \frac{13,80 + C + 10,30 + 7,70 + 1,50 + 6,50 + 8,60 + 30,50 + C}{9}$ $11,11 = \frac{78,9 + 2C}{9}$ $11,11 \times 9 = 78,9 + 2C$ $99,99 - 78,9 = 2C$ ✓S $\frac{21,09}{2} = C$ ✓M $10,55 = C$ The statement is correct ✓O *Die stelling is korrek*	1MA adding the values and dividing by 9 1S subtracting values 1M dividing by 2 1O conclusion value (4)	D L2 D
3.1.7	✓SF $0,87\% = \frac{60\ 414\ 495 - \text{Population 2022}}{\text{Population 2022}} \times 100\%$ ✓M $60\ 414\ 495 = 1,0087 \times$ Population/*Bevolking* 2022 $\frac{60\ 414\ 495}{1,0087}$ = Population / *Bevolking* 2022 ✓M Population / *Bevolking* 2022 = 59 893 422 ✓CA **OR/*OF*** ✓RT Population/*Bevolking* 2022 x 1,0087 = 60 414 495 Population/*Bevolking* 2022 $= \frac{60\ 414\ 495}{1,0087}$ ✓M = 59 893 422,23 ✓S = 59 893 422 ✓CA	1SF substituting 0,87% and 60 414 495 in the formula 1M changing the subject of the formula 1M dividing by 1,0087 1CA population in 2022 **OR/*OF*** 1RT correct value 1M increasing population 2022 by 1,0087 1S simplification 1CA population in 2022 (4)	D L3 D
		[20]	

QUESTION 4/*VRAAG* [20 MARKS/*PUNTE*]

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.1.1	✓MA $\frac{1}{3} \times$ R4 127 346 R1 375 782 ✓A Yes . The statement is correct ✓O *Ja , die stelling is korrek*	1MA multiplying by fraction 1A simplification 1O conclusion (3)	F L4 E

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4.1.2	Tax ✓A R130 500 + 36% of taxable income above 1 050 000 R130 500 + 36% (R4 127 346 − R1 050 000) ✓SF R130 500 + (36% × R3 077 346) ✓S R130 500 + R1 107 844,56 ✓MCA R1 238 344,56 ✓CA		1A correct tax bracket 1SF correct substitution 1S simplification 1MCA simplification 1CA simplification (5)	F L2 M
4.2.1	*Totale verhouding* ✓M Total of ratio = 1 + 9,8891 = 10,8991 ✓MA $\frac{1}{10,8991}$ × R4 127 346 R379 034,63 ✓CA R379 000 ✓R		1M adding the ratio 1MA multiplying R4 127 346 by $\frac{1}{10,8991}$ 1CA simplification 1R rounded to nearest 1 000 (4)	F L2 D
4.2.2	Less likely/*Minder waarskynlik* ✓✓A		2A probability (2)	P L2 M
4.3	✓A $\frac{1}{23,7379}$ ✓A 0,04212672562		1A numerator 1A denominator (2)	F L2 E
4.4	The interquartile range / *Interkwartielomvang* ✓A IQR = $Q_3 - Q_1$ 62 467,5 = 149 395,5 − Q_1 ✓SF ✓ MA Q_1 = 149 395,5 − 62 467,5 Q_1 = 86 928 ✓CA		1A correct formula 1SF substituting into formula 1MA changing the subject of the formula 1CA simplification (4)	D L3 M
			[20]	
			TOTAL/*TOTAAL*: 100	

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