basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS
SENIORSERTIFIKAAT-EKSAMEN
NASIONALE SENIORSERTIFIKAAT-EKSAMEN

MATHEMATICAL LITERACY P2/*WISKUNDIGE GELETTERDHEID V2*

2023

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	Reading from a table/a graph/document/diagram/*Lees vanaf tabel/grafiek/diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in formule*
O	Opinion/Explanation/Reasoning /*Opinie/Verduideliking/redenasie*
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 correct rounding/*Geen penalisasie vir korrekte afronding nie*
AO	Answer only/*Slegs antwoord*
MCA	Method with constant accuracy/*Metode met volgehoue akkuraatheid*
RCA	Rounding consistent with accuracy/Afronding met volgehoue akkuraatheid

These marking guidelines consist of 17 pages.
Hierdie nasienriglyne bestaan uit 17 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.
- NOTE: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only.
- Rounding is an independent mark.
- In order to award the verification / conclusion mark the candidate must have scored at least one mark in the calculations preceding the final conclusion.

LET WEL:
- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n 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 op by die tweede berekeningsfout.*
- *Let wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *'n Algemene nasienbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor.*
- *Afronding tel as 'n afsonderlike punt.*
- *Ten einde die verifikasie/ gevolgtrekking punt toe te ken moes die kandidaat ten minste een punt gekry het in die berekeninge wat lei tot die finale gevolgtrekking.*

Note: Questions marked with * refers to the notes.
Questions where the numbers are encircled are the ones where we have a tolerance range.

QUESTION/*VRAAG* 1 [28 MARKS/*PUNTE*] Answer Only AO - full marks			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
*1.1.1	E ✓✓A	2A correct option (2)	M L1 E
*1.1.2	C ✓✓A	2A correct option (2)	M L1 E
*1.1.3	I ✓✓A	2A correct option (2)	MP L1 E
*1.1.4	B ✓✓A	2A correct option (2)	MP L1 E
*1.1.5	G ✓✓A	2A correct option (2)	P L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
1.2.1	✓RT ✓ RT ✓ RT Potatoes, Onions and Cucumber *Aartappels, Uie en Komkommer*	3RT correct partner (3)	MP L1 E
1.2.2	Six /*Ses* (6) ✓✓ RT	2RT correct number (2)	MP L1 M
1.2.3	Beans /*Bone* ✓✓ RT	2RT correct partner (2)	MP L1 M
*1.2.4	South East **OR** SE ✓✓ RT *Suidoos **OF** SO*	2RT correct direction (2)	MP L1 M
*1.2.5	✓✓RT ✓ RT 3 and 7	2RT 1st correct number label 1RT 2nd correct number label (3)	MP L1 E
1.3.1	C **OR/*OF*** $\pi \times r^2 \times h$ ✓✓ RT	2A correct option (2)	M L1 E
1.3.2	mm^3 ✓✓A	2A correct unit (2)	M L1 E
1.3.3	mm to metre = 124 ÷ 1 000 ✓C *mm tot meter* = 0,124 m ✓ A	1C correct conversion/dividing by 1 000 1A answer in metres (2)	M L1 E
		[28]	

QUESTION/*VRAAG* 2 [24 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1.1	5 ✓✓ A	2A correct number (2)	MP L1 E
2.1.2	Tripod/*Driepoot* ✓✓ A	2A correct item (2)	MP L1 E
2.1.3	Clockwise/*Kloksgewys* ✓✓ A	2A correct direction (2)	MP L1 E
2.1.4 (a)	H ✓✓A	2 A correct choice (2)	MP L2 M
2.1.4 (b)	G ✓✓A	2 A correct choice (2)	MP L2 M
2.2.1	65 km × 100 000 = 6 500 000 cm ✓C Distance on the map /*Afstand op kaart* = $\frac{6\,500\,000}{250\,000}$ ✓MA = 26 cm ✓CA **OR/*OF*** 65 km × 1 000 000 = 65 000 000 mm ✓C Distance on the map /*Afstand op kaart* = $\frac{65\,000\,000}{250\,000}$ ✓MA = 260 mm ✓CA **OR/*OF*** Map: Reality *Kaart : Werklikheid* 1: 250 000 Map Dist/*Kaart afstand* : 65 km Map distance = $\frac{65}{250\,000}$ *Kaart afstand* = 0,00026 km ✓C = (0,00026 × 100 000) cm = 26 cm ✓CA	1C conversion 1MA division by 250 000 1CA simplification **OR/*OF*** 1C conversion 1MA division by 250 000 1CA simplification **OR/*OF*** 1MA division by 250 000 1C conversion 1CA simplification	MP L2 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF* 1 cm: 250 000 cm ∴ 1 *cm* : 2,5 *km* ✓C ∴ 1 : 2,5 *km* Map Dist/*Kaart afstand* : 65 km Map distance /*Kaart afstand* $= \frac{65}{2,5}$ ✓MA = 26 cm ✓CA	1C conversion 1MA division by 2,50 1CA simplification (3)	
2.2.2	Bar scale or line scale or Graphic Scale ✓✓A *Staafskaal/ Balkskaal of lynskaal* of *Grafiese skaal*	2A correct scale (2)	MP L1 E
*2.3.1	Number of reams lengthwise/ *Getal rieme in die lengte* ✓ MA $= \frac{102\text{ cm}}{27,94\text{ cm}}$ ✓ A $= 3,65 \approx 3$ ✓ R Number of reams widthwise /*Getal rieme in die breedte* $= \frac{44\text{ cm}}{21,59\text{ cm}} = 2,04 \approx 2$ ✓ MCA Number of reams heightwise/*Getal rieme in die hoogte* $= \frac{39\text{ cm}}{6,35\text{ cm}} = 6,14 \approx 6$ ✓ A Total number of reams/*Totale getal rieme* = 3 × 2× 6 ✓ MCA = 36 ✓ CA	1MA dividing lengths 1A simplification 1R rounding down 1MC A reams widthwise 1A reams heightwise 1MCA multiplying the values 1CA total number of reams (7)	MP L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.3.2	✓✓O To keep them dust free/*Om stof af te keer* To keep the reams dry/ moisture free *Om die rieme droog te hou* **OR/*OF*** To keep them safe for later use. *Om hulle veilig te bêre vir latere gebruik* **OR/*OF*** Glass door - For learners to see that the teacher is using their reams of paper – Easy to see how many reams are left (record keeping). *Glasdeure - Sodat leerders kan sien hul onderwyser gebruik hulle rieme papier* *--maklik om te sien hoeveel rieme is oor (hou rekord)* **OR/*OF*** Convenient –Paper is in the class for later usage. –Keeps the teacher's table clear/more space on teacher's table –Easily accessible when needed. –Effective use of space *Gerieflik:* – *die papier is in die klas gereed vir later gebruik* – *Hou die onderwyser se tafel skoon /meer spasie op die onderwyser se tafel* – *Maklike toegang te hê* – *Effektiewe gebruik van spasie* **OR/*OF*** Keeps the classroom neat and in order. *Hou die klaskamer netjies en skep orde.*	2O reason (2)	MP L4 E
		[24]	

QUESTION/*VRAAG* 3 [31 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
3.1.1	Surface area wall 1 = length × width *Oppervlakte muur 1 = lengte × breedte* = 4,8 m × 2,75 m ✓SF = 13,2 m^2 ✓CA Surface area wall 2 = length × width *Oppervlakte muur 2 = lengte × breedte* = 3,50 m × 2,75 m = 9,6250 m^2 ✓A Total surface area / *Totale oppervlakte* = (13,2 + 9, 625) m^2 = 22,8250 m^2 ✓CA **OR/*OF*** ✓SF T SA/ *TO* = (4,8 m × 2,75 m) + (3,5 m × 2,75 m) ✓CA = 13,2 m^2 + 9,6250 m^2 ✓A = 22,8250 m^2 ✓CA **OR/*OF*** ✓A Surface Area = (3,5 m + 4,8 m) × 2,75 m ✓SF = 8,3 × 2,75 ✓CA = 22,825 m^2 ✓CA	1SF substitution 1CA simplification 1A simplification 1CA simplification **OR/*OF*** 1SF substitution 1CA simplification 1A simplification 1CA simplification **OR/*OF*** 1A adding both wall dimensions 1SF substitution 1CA simplification 1CA simplification **NPR** (4)	M L2 M
*3.1.2	Volume = Area of wall × thickness of plaster *Volume = Opp van muur × dikte van pleister* ✓C ✓C $= (22{,}8250 \times 10\,000) \times \frac{12}{10}$ ✓SF ✓CA = 228 250 cm^2 × 1,2 cm = 273 900 cm^3 ✓CA	**CA from 3.1.1** 2C conversion 1SF substitution 1CA simplification 1CA simplification	M L3 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*		
	12 mm = 1,2 cm ✓C	1C conversion mm to cm	
	$22{,}825\text{m}^2 = (22{,}825 \times 100 \times 100)\ \text{cm}^2$ ✓C $= 228\ 250\ \text{cm}^2$ ✓CA	1C conversion m^2 to cm^2 1CA simplification	
	Volume = Area of wall × thickness of plaster *Volume = Opp van muur × dikte van pleister* $= 228\ 250\ \text{cm}^2 \times 1{,}2\ \text{cm}$ ✓SF $= 273\ 900\ \text{cm}^3$ ✓CA	1SF substitution 1CA simplification	
	OR/*OF*	**OR/*OF***	
	12 mm = (12 ÷ 1 000) = 0,012 m ✓C	1C conversion m	
	Volume = 22,825 × 0,012 ✓SF = 0,2739 m^3 ✓CA = (0,2739 × 100 × 100 × 100) ✓C = 273 900 cm^3 ✓CA	1SF substitution 1CA simplification 1C conversion m^3 to cm^3 1CA simplification	
	OR/*OF*	**OR/*OF***	
	Volume = 22 825 000 mm^2 × 12 mm ✓C ✓SF = 273 900 000 mm^3 ✓CA = 273 900 cm^3 ✓C ✓CA	1C conversion mm^2 1SF substitution 1CA simplification 1C conversion cm^3 1CA simplification (5)	
3.1.3	Number of bags/ *Getal sakke* $= \frac{273\ 900\ \text{cm}^3}{15\ 000\ \text{cm}^3}$ ✓ MCA = 18,26 ✓ CA ≈ 19 ✓ R	**CA from 3.1.2** 1MCA dividing 1CA simplification 1R rounding up (3)	M L2 M
3.1.4	Perimeter / *Omtrek* = 2 × (4,8 + 3,5) m ✓RT ✓SF = 16,6 m ✓CA	1SF substitution 1RT correct values 1CA simplification	M L2 E
	OR/*OF*	**OR/*OF***	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	Perimeter/ *Omtrek* = 4,8 m + 3,5 m + 4,8 m + 3,5 m ✓MA ✓RT = 16,6 m ✓CA **OR/*OF*** Perimeter/*Omtrek* ✓MA = 2(3,5 m) + 2(4,8 m) ✓RT = 16,6 m ✓CA	1MA adding all 4 sides 1RT correct values 1CA simplification **OR/*OF*** 1MA adding all 4 sides 1RT correct values 1CA simplification **AO** (3)	
3.2.1	P = $\frac{1}{5}$ ✓A ✓A **or/*of*** 0,2 **or/*of*** 20%	1A numerator 1A denominator **AO** (2)	P L2 E
*3.2.2	P(not appear/ *nie verskyn*) = 1 – 0,75 ✓MA = 0,25 ✓A **or/*of*** ¼ **or/*of*** 25%	1MA subtracting from 1 1A simplification **AO** (2)	P L2 M
3.2.3	Less likely /*kleiner kans* ✓✓A	**CA from Q3.2.2** 2A correct likelihood (2)	P L2 E
*3.3.1	Starting time /*Begin tyd* = 08:05 – 2 min – 3 min – 4 min ✓MA ✓A = 07:56 ✓CA **OR/*OF*** Total time to prepare: = 4 min + 3 min + 2 min = 9 min ✓A Starting time /*Begin tyd* = 08:05 – 9 min ✓MA = 07:56 ✓CA **or** 4 minutes to eight in the morning	1MA subtract minutes 1A all the minutes 1CA simplification **OR/*OF*** 1A all the minutes 1MA subtract minutes 1CA simplification **AO** (3)	M L2 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.3.2	Total volume of water /*totale volume water* ✓MA $= 7\ \ell \times 5 = 35\ \ell$ 1 gallon/*gelling* = 3,78541 ℓ Number of gallons /*Getal gellings* $= \frac{35}{3,78541}$ ✓C $= 9,24602619 \approx 9,25$ ✓R **OR/*OF*** 1 gallon/*gelling* = 3,78541 ℓ n = 7 ℓ Number of gallons /*Getal gellings* $= \frac{7}{3,78541}$ ✓C $= 1,849205\ldots \approx 1,85$ For 5 bags/*Vir 5 sakke* ✓MA ✓R = 1,85 × 5 = 9,25 gallon / *gelling*	1MA multiplying with 5 1C converting 1R rounded answer **OR/*OF*** 1C converting 1MA multiplying with 5 1R rounded answer (3)	M L2 M
3.3.3	°F – 32° = (1,8 × °C) ✓SF 73,4 – 32° = (1,8 × °C) ✓S 41,4° = 1,8 × °C ✓MCA °C = 41,4° ÷ 1,8 = 23 °C ✓CA	1SF correct substitution 1S simplification 1MCA dividing by 1,8 1CA simplification (4)	M L2 M
		[31]	

QUESTION/*VRAAG* 4 [30 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
4.1.1	12 ✓✓ RT	2RT number of houses (2)	MP L2 E
4.1.2	✓✓ RT ✓ RT 1 , 2 **or/*of*** 12 Any two /*Enige twee*	2RT 1st house label or number 1RT second (3)	MP L2 M
*4.2.1	The depth 1m **or** it is shallow/ not too deep. ✓✓ O *Die diepte is 1m **of** dit is vlak/ nie te diep nie.*	2O explanation (2)	M L4 M
4.2.2	✓✓ A ***Capacity:*** the maximum amount of water the pool can hold/contain. ***Kapasiteit*** *is die maksimum hoeveelheid water wat die swembad kan hou.* **OR/*OF*** ***Capacity:*** a measure of space covered by pool structure with water. ***Kapasiteit*** *is die mate van spasie wat die swembad met water vul.*	2A concept (2)	M L1 M
*4.2.3	✓A Volume$_{(cylinder)}$ = 3,142 × $(\frac{7}{2}\text{m})^2$ × 1m ✓ SF = 3,142 × $(3{,}5\text{m})^2$ × 1m = 38,4895 m^3 ✓ CA Volume $_{(rectangular)}$ = 6,2 m × 3,25 m × 1,65 m ✓ SF = 33,2475 m^3 ✓CA Difference / *Verskil* = 38,4895 m^3 – 33,2475 m^3 ✓MCA = 5, 242 m^3 ✓CA = 5 242 ℓ ✓C **OR/*OF***	1A radius 1SF correct substitutions 1CA simplification 1SF correct values 1CA rectangular volume 1MCA subtracting 1CA difference 1C conversion **OR/*OF***	M L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	✓A ✓ SF ✓C Volume$_{(cylinder)}$ = 3,142 × (3,5m)^2 × 1m × 1 000 ℓ/ m^3 = 38 489,5 ℓ ✓ CA ✓ SF Volume $_{(rectangular)}$ = 6,2 m × 3,25 m × 1,65 m × 1 000ℓ/m^3 = 33 247,5 ℓ ✓ CA Difference / *Verskil* = 38 489,5 ℓ – 33 247,5 ℓ ✓MCA = 5 242 ℓ ✓CA	1A radius 1SF correct substitutions 1C conversion 1CA simplification 1SF correct values 1CA rectangular volume 1MCA subtracting 1CA difference **NPR** (8)	
4.2.4 (a)	✓✓ O To accommodate cutting the tiles **or** breakages **or** curved surfaces **or** keep spares for later usage. *Om voorsiening the maak die sny van teëls **of** breekskade **of** die gekurfde oppervlaktes **of** om oor te hou vir latere gebruik.*	2O reason (2)	M L4 E
*4.2.4 (b)	**CA radius form 4.2.3** SA$_{(open\ cylinder)}$/*BO* = 3,142 × radius × (radius + 2 × height) = 3,142 × 3,5 m × (3,5 m + 2 × 1 m) ✓ SF = 3,142 × 3,5 m × 5,5 m = 60,4835 m^2. ✓ CA Area of one tile/ *Opp van 1 teël* = $\frac{20}{100}$m × $\frac{20}{100}$m ✓ C = 0,2 × 0,2 m^2 = 0,04 m^2. ✓ CA Number of tiles needed /*Getal teëls nodig* = $\frac{\text{Area to be tiled}}{\text{Area of single tile}}$ = $\frac{60,4835}{0,04}$ ✓ MCA ✓ CA = 1 512,0875 **OR/*OF*** ≈ 1 513 Plus 10% = $\frac{10}{100}$ × 1 512,0875 + 1 512,0875 ✓ MCA = 1 663,29625 tiles /*teëls* ≈ 1 664 tiles /*teëls* ✓CA Number of boxes /*Getal bokse* = 1 664 ÷ 16 ✓MCA = 104 ✓CA VALID/*GELDIG* ✓O Or rounded up: 1 513 × 110% = 1 664,3 ≈ 1665 Boxes = 1 665 ÷ 16 = 104,06 ≈ 105	**CA radius form 4.2.3** 1SF substitution 1CA area of pool 1C conversion 1CA area of a tile 1MCA finding number of tiles 1CA simplification 1MCA calc. 10% and adding it **or** multiply with 1,10 1CA number of tiles 1MCA dividing 1CA number of boxes 1O conclusion	M L4 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*		
	$SA_{(\text{open cylinder})}$/*BO* = 3,142 × radius × (radius + 2 × height) = 3,142 × 3,5 m × (3,5 m + 2 × 1 m) ✓ SF = 3,142 × 3,5 m × 5,5 m = 60,4835 m^2. ✓ CA	1SF substitution 1CA SA of pool	
	Area of one tile/ *Opp van 1 teël* = $\frac{20}{100}$m × $\frac{20}{100}$ m ✓ C = 0,2 × 0,2 m^2 = 0,04 m^2. ✓ CA	1C conversion 1CA area of a tile	
	Number of tiles needed */Getal teëls nodig* = $\frac{\text{Area to be tiled}}{\text{Area of single tile}}$ = $\frac{60,4835}{0,04}$ ✓ MCA ✓ CA = 1 512,0875 **OR/*OF*** ≈ 1 513	1MCA finding number of tiles 1CA simplification	
	Number of boxes/*Getal bokse* = 1 512,0875 ÷ 16 ✓ MCA = 94,505… ✓ CA	1MCA dividing 1CA number of boxes	
	Increased number/ *Verhoogde getal* = 94,505… × 110% ✓ MCA = 103,95… ≈ 104 ✓ CA VALID/*GELDIG* ✓ O	1MCA calc. 10% and adding it **or** multiply with 1,10 1CA number of boxes 1O conclusion	
	OR/*OF*	**OR/*OF***	
	$SA_{(\text{open cylinder})}$/*BO* = 3,142 × radius × (radius + 2 × height) = 3,142 × 3,5 m × (3,5 m + 2 × 1 m) ✓ SF = 3,142 × 3,5 m × 5,5 m = 60,4835 m^2. ✓ CA	1SF substitution 1CA area of pool	
	Area of one tile/ *Opp van 1 teël* = $\frac{20}{100}$m × $\frac{20}{100}$ m ✓ C = 0,2 × 0,2 m^2 = 0,04 m^2. ✓ CA	1C conversion 1CA area of a tile	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	Continue Area covered by one box/*Opp wat een boks bedek* = 0,04 m^2 × 16 ✓ MCA = 0,64 m^2 ✓ CA Number of boxes/*Getal bokse* $= \frac{60,4835}{0,64}$ ✓ MCA =94,505… ✓ CA Increased number/ *Verhoogde getal* = 94,505… × 110% ✓ MCA = 103,95… ≈ 104 ✓ CA VALID/*GELDIG* ✓ O **OR/*OF*** $SA_{(open\ cylinder)}$/*BO* = 3,142 × radius × (radius + 2 × height) = 3,142 × 3,5 m × (3,5 m + 2 × 1 m) ✓ SF = 3,142 × 3,5 m × 5,5 m = 60,4835 m^2. ✓ CA Increased area/*Vergrote opp* = 60,4835 × 1,1 ✓ MCA = 66,53185 ✓ CA Area of one tile/ *Opp van 1 teël* $= \frac{20}{100}$m × $\frac{20}{100}$m ✓ C = 0,2 × 0,2 m^2 = 0,04 m^2. ✓ CA Area covered by one box/*Opp wat een boks bedek* = 0,04 m^2 × 16 ✓ MCA = 0,64 m^2 ✓ CA Number of boxes/*Getal bokse* $= \frac{66,53185}{0,64}$ ✓ MCA = 103,956… ≈ 104 ✓ CA VALID/*GELDIG* ✓ O	1MCA finding area of box of tiles 1CA simplification 1MCA dividing 1CA number of boxes 1MCA calc. 10% and adding it **or** multiply with 1,10 1CA number of boxes 1O conclusion **OR/*OF*** 1SF substitution 1CA area of pool 1MCA calc. 10% and adding it **or** multiply with 1,10 1CA simplification 1C conversion 1CA area of a tile 1MCA finding area of box of tiles 1CA simplification 1MCA dividing 1CA number of boxes 1O conclusion (11)	
		[30]	

QUESTION/*VRAAG* 5 [37 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
5.1.1	R617 ✓✓RT	2RT correct road (2)	MP L1 E
5.1.2	6 km ✓✓RT	2RT correct distance (2)	MP L1 E
5.1.3	Left /*Links* ✓✓A	2A correct direction (2)	MP L1 E
5.1.4	Dist. = 16km – dist. Hotel to Mkomazana – dist. Himeville to turn ✓RT *Afstand* = 16 km – 4,4 km – 2 km ✓M = 9,6 km ✓CA	1RT 2 km 1M subtracting of at least one correct value 1CA simplification (3)	M L2 M
5.2.1	The owners need to clean, put fresh linen on the beds and get the cottage ready early for the next booking. ✓✓O *Die eienaars moet die plek skoon maak, skoon beddegoed opsit en die kothuis vroeg gereed kry vir die volgende bespreking.* **OR/*OF*** To encourage spending more days at the venue. *Om kliënte aan te moedig om meer dae oor te bly.* **OR/*OF*** Breaking a long stay. To justify renting out the cottage for one night while someone else might have stayed longer. *Dit onderbreek 'n lang oorbly.* *Om dit te regverdig om die kothuis uit te verhuur vir een nag terwyl iemand anders langer kon oorbly.*	2O reason (2)	MP L4 M
5.2.2	✓A Valley Cottage **OR** Coot Cottage *Vallei kothuis **OF** Bleshoender kothuis* ✓✓O These cottages sleeps 6 persons **OR** can accommodate 5 to six **OR** they are 5 **OR** Cheaper option / Price of 6 sleeper accommodation is more reasonable (R2 640 ÷ 6 = R440 pp) compared to the 2 sleeper (R1 150 ÷ 2 = R575 pp) / *Hierdie kothuise is vir 6 persone **OF** hulle kan 5 tot 6 persone huisves **OF** die groep is 5 **OF** Dit is die goedkoper opsie / Koste per persoon vir die 6-persoon is goedkoper (R2 640 ÷ 6 = R440 pp) vergeleke met 2-persoon (R1 150 ÷ 2 = R575 pp)* .	1A one correct cottage 2O reason (3)	MP L4 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
*5.2.3	**6 sleeper / *slaper*:** Total cost / *totale koste* ✓RT ✓RT = R2 640 + R2 730 × 2 ✓MA = R8 100 ✓CA VALID/ *GELDIG* ✓O	**CA from 5.2.2** 1RT correct rate, Thursday 1RT correct rate, weekend 1MA multiplying with 2 1CA simplification 1O conclusion (5)	M/F L4 M
5.3.1 (a)	✓A False, the map shows other roads also have toll gates. ✓O *Onwaar, die kaart toon ook ander tolhekke*	1A correct option 1O reason (2)	MP L4 E
5.3.1 (b)	True/ *Waar* ✓✓A	2A correct option (2)	MP L4 E
5.3.2	✓✓O Top view **or** aerial view **or** bird's eye view **or** satellite view *Bo-aansig **of** vanuit die lug aansig **of** voël-aansig **of** satelliet aansig.*	2O correct view (2)	MP L1 E
5.3.3	Distance/*Afstand* = speed/*spoed* × time/*tyd* 588 km = speed/*spoed* × 7 h ✓SF Speed/*spoed* = $\frac{588\text{ km}}{7\text{ h}}$ ✓A = 84 km/h ✓CA	1SF substitution 1A change subject of formula 1CA simplification (3)	M L2 M
*5.3.4	Expense for tolls / *Tol-fooie*: ✓RT = R56,00 + R77,00 + R82,00 + R58,00 = R273 ✓CA Fuel used/*Brandstof verbruik* = 588 km ÷ 100 km × 6,42 ℓ ✓MA = 37,7496 ℓ ✓A Fuel cost / *Brandstofkoste* = 37,7497 × R21,40 = R807,84 ✓CA Total cost / *Totale koste* = R8 100 + R807,84 × 2 + R273,00 × 2 ✓MCA = R10 261,68 ✓CA Cost per person / *Koste per person* = R10 261,68 ÷ 5 ✓MCA = R2 052,34 ✓CA	**CA from 5.2.3** 1 RT correct 4 tolls 1CA simplification 1MA fuel consumption rate 1A simplification 1CA fuel cost 1MCA return trip 1CA total cost for 3 items 1MCA dividing by 5 1CA simplification	M/F L3 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*		
	Round trip/ *Heer en terug* 588 km × 2 = 1176 km Fuel used/*Brandstof verbruik* = 1 176 km ÷ 100 km × 6,42 ℓ ✓MA = 75,4992 ℓ ✓A	1MA fuel consumption rate 1A simplification	
	Fuel cost / *Brandstofkoste* = 75,4992 × R21,40 = R1 615,68 ✓CA	1CA fuel cost	
	Cost per person/*Koste per persoon* = R1 615,68 ÷ 5 ✓MA = R323,14	1MA dividing by 5	
	Toll fees / *Tol-fooie*: = R56,00 + R77,00 + R82,00 + R58,00 ✓RT = R273 ✓CA	1 RT correct 4 tolls 1CA simplification	
	Round trip/ *Heen en weer* = R273 × 2 ✓MCA = R546	1MCA return trip	
	Cost per person/*Koste per persoon* = R546 ÷ 5 =R109,20		
	Accomodation per person/*Verblyf per persoon* =R8100 ÷ 5 =R1 620		
	Total per person/ *Totaal per persoon* = R323,14 + R109,20 + R1 620 ✓MCA = R2 052,34 ✓CA	1MCA adding all the values 1CA total cost	
	OR/*OF*	**OR/*OF***	
	Toll Expenses / *Tol-fooie*: ✓MCA ✓RT = 2(R56,00 + R77,00 + R82,00 + R58,00) = R546,00 ✓CA	1MCA return trip 1 RT correct 4 tolls 1CA simplification	
	Fuel Cost /*Brandstof koste* Total Distance/*Afstand* = 588 km × 2 = 1176 km ✓MA ✓A Fuel used/*Brandstof*: $\frac{1176}{100} \times 6{,}42$ = 75,4992 ℓ	1MA fuel consumption rate 1A simplification	
	Cost/*Koste*: 75,4992 × R21,40 = R1 615,68 ✓CA	1CA fuel cost	
	Total Cost/*Totale koste*: ✓CA R8 100 + R546,00 + R1 615,68 = R10 261,68 ✓MCA ✓CA Cost PP/ Koste PP: R10 261,68 ÷ 5 = R2 052,34	1CA total cost for 3 items 1MCA dividing by 5 1CA simplification (9)	
		[37]	
		TOTAL/*TOTAAL*: 150	

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