



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE/ NASIONALE SENIOR SERTIFIKAAT

GRADE/GRAAD 12

**MATHEMATICAL LITERACY P2/
WISKUNDIGE GELETTERDHEID V2**

NOVEMBER 2025

MARKING GUIDELINES/NASIENRIGLYNE

MARKS/PUNTE: 150

Symbol/Kode	Explanation/Verduideliking
MA	Method with accuracy/Metode met akkuraatheid
MCA	Method with consistent accuracy/Metode met volgehoue akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/graph/document/diagram/Lees vanaf tabel/grafiek/dokument/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./Penalising, bv. vir geen eenhede, verkeerde afronding, ens.
NPR	No penalty for correct rounding/Geen penalising vir korrekte afronding nie
NPU	No penalty for omitting unit, but wrong unit is penalised/Geen penalisinge indien die eenheid uitgelos is nie, maar wel indien 'n verkeerde eenheid gebruik word.
AO	Correct answer only/Slegs korrekte antwoord

**These marking guidelines consist of 15 pages.
Hierdie nasienriglyne bestaan uit 15 bladsye.**

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.
- 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, 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 onafhanklike punt*
- *'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 [28 MARKS/PUNTE]		ANSWER ONLY FULL MARKS	
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.1.1	B ✓✓ A	2A correct option (2)	MP L1 E
1.1.2	G ✓✓ A	2A correct option (2)	MP L1 E
1.1.3	A ✓✓ A	2A correct option (2)	M L1 E
1.1.4	E ✓✓ A	2A correct option (2)	MP L1 E
1.1.5	F ✓✓ A	2A correct option (2)	M L1 E
1.2.1	✓ RT ✓ A Quarter past two in the afternoon. <i>Kwart oor twee in die middag.</i> OR/OF ✓ RT ✓ A Fifteen minutes after two in the afternoon. <i>Vyftien minute na twee namiddag.</i>	1RT correct time in words 1A correct time of day OR/OF 1RT correct time in words 1A correct time of day (2)	M L1 E
1.2.2	✓ MA Number of passengers/Aantal passasiers = $33\frac{1}{3}\% \times 189$ = 63 ✓ A OR/OF Number of passengers/Aantal passasiers = $\frac{1}{3} \times 189$ ✓ MA = 63 ✓ A	1MA multiply with $33\frac{1}{3}\%$ 1A simplification OR/OF 1MA multiply with $\frac{1}{3}$ 1A simplification (2)	M L1 M
1.2.3	B ✓✓ A	2A correct letter (2)	M L1 M
1.2.4	Thursday/Donderdag ✓✓ A	2A correct day (2)	M L1 E

Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
1.3.1	(a) R ✓ A (b) S ✓ A (c) U ✓ A (d) P ✓ A (e) Q ✓ A (f) T ✓ A	1A correct letter 1A correct letter 1A correct letter 1A correct letter 1A correct letter 1A correct letter 1A correct letter (6)	MP L1 M
1.3.2	C ✓✓ A	2A correct formula (2)	M L1 E
1.3.3	Length of geyser/Lengte van waterverwarmer $= 1,2 \text{ m} \times 1\,000$ ✓ MA $= 1\,200 \text{ mm}$ ✓ A	1MA multiply by 1 000 1A conversion (2)	M L1 E
		[28]	

QUESTION/VRAAG 2 [34 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.1.1	Number of seats/ <i>Getal sitplekke</i> = $59 + 22 - 4$ ✓MA = 77 seats/sitplekke ✓A	1MA addition and subtraction of correct values 1A simplification AO (2)	MP L1 E
2.1.2	✓A F2 ✓A	1A correct row 1A correct seat (2)	MP L2 M
2.1.3	a) Right/Regs ✓A b) Left/Links ✓A c) Aisle/Gang ✓A d) Second/Tweede ✓A	1A correct choice 1A correct choice 1A correct choice 1A correct choice (4)	MP L2 E
2.2.1	✓✓RT Camps Bay/Kampsbaai	2RT correct stop (2)	MP L1 E
2.2.2	Bar scale / Line scale / Linear scale / Graphic scale <i>Staafskaal/Lynskaal /Grafiese skaal</i> ✓✓RT	2RT correct scale (2)	MP L1 E
2.2.3	Clockwise/Kloksgewys ✓✓A	2A correct direction (2)	MP L1 E
2.2.4	✓A 13 mm = 500 m ✓RT Real distance in meter/<i>Regte afstand in meter</i> 19,2 km = 19 200 m ✓C Map distance/<i>Kaart afstand</i> = $19\,200 \div 500 \times 13$ ✓MCA = 499,2 mm ✓CA OR/OF ✓A Bar/<i>Staaf</i>: 1,3 cm = 500 m ✓RT 500 m = 0,5 km ✓C Map distance / <i>kaart afstand</i> = $\frac{19,2\text{ km} \times 1,3\text{ cm}}{0,5\text{ km}}$ ✓MCA = 49,92 cm ✓CA OR/OF	1A measured distance 1RT correct ratio 1C convert to m 1MCA divide and multiply 1CA simplification OR/OF 1A measured distance 1RT correct ratio 1C convert to km 1MCA divide and multiply 1CA simplification OR/OF	MP L3 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	Measure distance / <i>gemete afstand</i> $\checkmark A$ $1,3 \text{ cm} : 500$ $\checkmark RT$ $\checkmark C$ $0,013 \text{ m} : 500 \text{ m}$ $1 : 38\,461,53846$ $?: 19,2$ $? = \frac{19,2}{38\,461,53846}$ $\checkmark MCA$ $= 0,0004992 \text{ km}$ $= 49,92 \text{ cm OR } 499,2 \text{ mm}$ $\checkmark CA$ Accept 12 mm – 13 mm	1A measured distance 1RT correct ratio 1C convert to m 1MCA divide by scale factor 1CA simplification Accept 460,8 for 12 mm (5)	
2.3.1	$\checkmark \checkmark A$ Right / <i>Regs</i>	2A correct direction (2)	MP L1 E
2.3.2	Longer dimension/ <i>Langer afmeting</i> = 12'8" $\checkmark RT$ Length in cm/ <i>Lengte in cm</i> $12' \times 30,48$ $\checkmark MCA$ $= 365,76 \text{ cm}$ $\checkmark C$ $8'' \times 2,54$ $= 20,32 \text{ cm}$ $\checkmark C$ Total/ <i>Totaal</i> = 365,76 + 20,32 $= 386,08 \text{ cm}$ $\checkmark CA$ OR/OF Longer dimension/ <i>Langer afmeting</i> = 12'8" $\checkmark RT$ $\checkmark MCA$ Length/ <i>Lengte</i> = $(12 \times 30,48 \text{ cm}) + (8 \times 2,54 \text{ cm})$ $\checkmark C$ $\checkmark C$ $= 365,6 \text{ cm} + 20,32 \text{ cm}$ $= 386,08 \text{ cm}$ $\checkmark CA$	1RT 12'8" 1MCA multiply by 30,48 1C convert feet to cm 1C convert inches to cm 1CA simplification OR/OF 1RT 12'8" 1MCA multiply by 30,48 1C convert feet to cm 1C convert inches to cm 1CA simplification (5)	MP L3 M
2.3.3	$\checkmark \checkmark RT$ One has a living room and the other has a bedroom/ <i>Een het 'n woonkamer en die ander een 'n slaapkamer</i> $\checkmark \checkmark RT$ The balcony is on the first floor/ <i>Die balkon is op die eerste verdieping</i>	2RT identify first difference 2RT identify second difference (4)	MP L1 M
2.3.4	It is on the ground floor. / <i>Dit is op die grondverdieping.</i> $\checkmark \checkmark O$	2O explanation (2)	MP L4 M
2.3.5	There must be more flats adjacent to it. $\checkmark \checkmark O$ <i>Daar moet meer woonstelle langs aan wees.</i>	2O explanation (2)	MP L4 M
[34]			

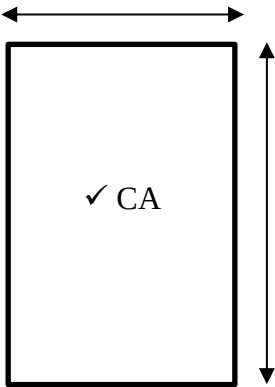
QUESTION/VRAAG 3 [32 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
3.1.1	✓ MA 13:12 – 3 hours and 27 min/3 ure en 27 min = 09:45 ✓ A OR/OF Time = 13,2 – 3,45 = 9,75 hours ✓ MA = 09:45 ✓ A	1MA subtracting time 1A simplification OR/OF 1MA subtracting the hours 1A simplification AO (2)	M L2 E
3.1.2	✓ RT ✓ MA Number/Getal = 1 + 2 + 3 + 4 + 5 + 6 + 7 = 28 ✓ CA OR/OF ✓ RT Number/Getal = $\frac{7(1+7)}{2}$ = 7 × 4 ✓ MA = 28 ✓ CA	1RT interpreting pattern 1MA adding values 1CA simplification OR/OF 1RT interpreting pattern 1MA multiplication of values 1CA simplification AO (3)	M L2 E
3.1.3	Height in cm/Hoogte in cm = 240 mm = 24 cm ✓ C ✓ RT Area/Oppervlakte = $\frac{1}{2}(28 \text{ cm} \times 24 \text{ cm})$ ✓ SF = 336 cm² ✓ CA OR/OF ✓ RT ✓ SF Area/Oppervlakte = $\frac{1}{2} \times 280 \text{ mm} \times 240 \text{ mm}$ = 33 600 mm² ✓ CA = 336 cm² ✓ C	1C conversion 1RT 28 1SF substitution in formula 1CA simplification OR/OF 1SF substitution in formula 1 RT 280 1CA simplification 1C conversion (4)	M L2 M
3.1.4	✓ MA Area of C/Oppervlakte van C = 30 240 mm² × 1,6 = 48 384 mm² ✓ CA Total Area/Totale oppervlakte = 48 384 mm² + 30 240 mm² + 33 600 mm² ✓ C = 112 224 mm² ✓ CA OR/OF	CA from 3.1.3 1MA multiply by 1,6 1CA simplification OR/OF 1C convert to mm² 1MCA adding values 1CA simplification OR/OF	M L3 M

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	Part/Deel B: $30\,240\text{ mm}^2 \div 10^2 = 302,4\text{ cm}^2$ $\checkmark$ MA Part /Deel C: $302,4\text{ cm}^2 \times 1,6 = 483,84\text{ cm}^2$ $\checkmark$ CA $\checkmark$ MCA $\checkmark$ CA Total/Totaal: $(336 + 483,84 + 302,4)\text{ cm}^2 = 1\,122,24\text{ cm}^2$ $\therefore (1\,122,24 \times 100)\text{ mm}^2 = 112\,224\text{ mm}^2$ $\checkmark$ C	1MA multiply by 1,6 1CA simplification 1MCA adding values 1CA simplification 1C convert to mm^2 (5)	
3.1.5	$9 + 7 + 28 + 8 + 22 = 74$ $\checkmark$ A $P = \frac{16}{74} \times 100\%$ $\checkmark$ MA $\approx 21,62\%$ $\checkmark$ CA OR/OF $9 + 7 + 28 + 8 + 22 = 74$ $\checkmark$ A $P(\text{red}) = \frac{9}{74} \times 100\%$ $\checkmark$ MA $= 12,16216216\%$ $P(\text{green}) = \frac{7}{74} \times 100\%$ $\checkmark$ MA $= 9,45945945\%$ $P(\text{red or green}) \approx 12,16\% + 9,46\%$ $= 21,62\%$ $\checkmark$ CA OR/OF $9 + 7 + 28 + 8 + 22 = 74$ $\checkmark$ A $P(\text{red or green}) = \frac{9}{74} + \frac{7}{74}$ $\checkmark$ MA $= 0,1216216... + 0,0945945...$ $= 0,216216... \times 100\%$ $= 21,62\%$ $\checkmark$ CA	1A correct number of circles 1MA correct numerator 1MA concept percentage 1CA simplification OR/OF 1A correct number of circles 1MA P(red) 1MA P(green) 1CA simplification OR/OF 1A correct number of circles 1MA P(red) 1MA P(green) 1CA simplification (4)	P L2 M
3.2.1	Radius of small circle/ <i>Radius van klein sirkel</i> $= \frac{4}{7} \times 14\text{ mm}$ $\checkmark$ MA $= 8\text{ mm}$ $\checkmark$ A	1MA multiplication by 14 1A correct length AO (2)	M L1 E

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.2.2	Circumference/Omtrek = $3,142 \times 2 \times 14 \text{ mm}$ ✓SF $= 87,976 \text{ mm}$ ✓CA $\approx 88 \text{ mm}$ ✓R	1SF substitution in formula 1CA simplification 1R rounding (3)	M L2 M
3.2.3	Area of material/Oppervlakte van materiaal ✓C $= 30 \text{ cm} \times 137 \text{ cm}$ ✓SF $= 4\,110 \text{ cm}^2$ ✓CA Total area of all circles/Totale oppervlakte van alle sirkels ✓SF ✓MA ✓MA $= 3,142 \times (1,4 \text{ cm})^2 \times 48 \times 2 \times 2$ $= 1\,182,40 \text{ cm}^2$ ✓CA Area of off-cuts/Oppervlakte van oorblyfsels $= 4\,110 \text{ cm}^2 - 1\,182,40 \text{ cm}^2$ $= 2\,927,60 \text{ cm}^2$ ✓CA ✓O Her statement is CORRECT/Haar stelling is KORREK OR/OF Area of material/Oppervlakte van materiaal ✓C $= 30 \text{ cm} \times 137 \text{ cm}$ ✓SF $= 4\,110 \text{ cm}^2$ ✓CA Area of circle /Oppervlakte van sirkel = $3,142 \times \text{radius}^2$ $= 3,142 \times (1,4 \text{ cm})^2$ ✓SF $= 6,15832 \text{ cm}^2$ ✓MA Number of circles / Getal sirkels = $48 \times 2 = 96$ For both sides/ Vir beide kante = $96 \times 2 = 192$ ✓MA Total area/ Totale oppervlakte = $6,15832 \text{ cm}^2 \times 192$ $= 1\,182,39744 \text{ cm}^2$ ✓CA Area of off-cuts/Oppervlakte van oorblyfsels $= 4\,110 - 1\,182,39744$ $\approx 2\,927,60 \text{ cm}^2$ ✓CA ✓O Her statement is CORRECT/Haar stelling is KORREK	1C converting to cm 1SF substitution in formula 1CA correct area 1SF substitution in formula 1MA multiplying by 48 1MA multiplying by 2×2 1CA simplification 1CA area of off cuts 1O opinion OR/OF 1C converting to cm 1SF substitution in formula 1CA correct area 1SF substitution in formula 1MA multiplying by 48 1MA multiplying 96 by 2 1CA simplification 1CA area of off cuts 1O opinion (9)	M L4 D
		[32]	

QUESTION/VRAAG 4 [30 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.1.1	De Aar ✓✓ A	2A correct town (2)	MP L1 E
4.1.2 (a)	8 ✓✓ A	2A correct number (2)	MP L2 E
4.1.2 (b)	✓✓ A ✓ A Kimberley and/en Britstown	2A 1 st correct town 1A 2 nd correct town (3)	MP L2 E
4.1.3	Provincial borders are indicated by a broken line / dotted line/ dashed line ✓✓ O <i>Provinsiale grense word deur 'n gebroke lyn/ stippellyn voorgestel</i>	2O correct description (2)	MP L4 M
4.2.1	17 months/maande ✓✓ A	2A number of months (2)	M L2 E
4.2.2	Time of arrival/Aankomstyd ✓ MA = 19:00 + 14 hours 25 min/14 ure 25 min = 09:25 ✓ A ✓ A 16 June 2023 at 09:25 / 16 Junie 2023 teen 09:25 OR/OF From/Van 19:00 to 24:00 = 5 hours/ure ✓ A 14 hours/ ure 25 min – 5 hours/ure = 09:25 ✓ A ✓ A 16 June 2023 at 09:25 / 16 Junie 2023 teen 09:25	1MA adding the flight time 1A 16 June 1A arrival time OR/OF 1A 5 hours 1A 16 June 1A arrival time AO (3)	M L3 M
4.2.3	0 ; 0% , Impossible /Onmoontlik ✓✓ A	2A correct probability (2)	P L2 E
4.2.4	Distance = Speed × time /Afstand = Spoed × tyd 770 km = speed/spoed × 14 hours 25 min/14 ure 25 min ✓ SF $\text{Speed/Spoed} = \frac{770 \text{ km}}{14 \text{ hours } 25 \text{ min}} \quad \checkmark \text{ S}$ $= \frac{770 \text{ km}}{14,4166... \text{ hours}} \quad \checkmark \text{ C}$ $\approx 53,41 \text{ km/h} \quad \checkmark \text{ CA}$	1SF substitute into formula 1S change subject of formula 1C convert minutes to hours 1CA simplification (4)	M L2 D

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.2.5	1 mile/myl = 1,60934 km 311,72 miles/myle = ? km ? = 311,72 × 1,60934 km ✓MA = 501,6634... km ✓A Extra distance/<i>Ekstra afstand</i> = 770 km – 501,6634... km ✓MCA = 268,336... km ✓CA INVALID/NIE GELDIG NIE ✓O OR/OF Distance/ <i>Afstand</i> = 311,72 × 1,60934 km ✓MA = 501,6634... km ✓A Total distance/ <i>Totale afstand</i> = 501,6634... km + 268,13 km ✓MCA = 769,7934... km ✓CA INVALID/ NIE GELDIG NIE ✓O	1MA multiply with conversion factor 1A simplification 1MCA subtracting 1CA simplification 1O verification OR/OF 1MA multiply with 1,60934 1A simplification 1MCA adding 268,13 1CA simplification 1O verification (5)	M L4 M
4.2.6	Number of adults/<i>Aantal volwassenes</i> = 78% × 333 million/<i>miljoen</i> ✓MA = 259,74 million/<i>miljoen</i> Number of adult women/<i>Aantal volwasse vroue</i> = 50% × 259,74 million/<i>miljoen</i> ✓MA = 129,87 million/<i>miljoen</i> Number shorter than flamingo/<i>Aantal korter as flamink</i> = 10% × 129,87 million/<i>miljoen</i> ✓MA = 12,987 million/<i>miljoen</i> ✓CA ≈ 13 million/<i>miljoen</i> ✓R OR/OF ✓MA Number of women/ <i>vroue</i> = 50% × 333 000 000 = 166 500 000 ✓MA Number of adults/ <i>volwasse</i> = 78% × 166 500 000 = 129 870 000 Number shorter / <i>korter</i> = 10% × 129 870 000 ✓MA = 12 987 000 ✓CA ≈ 13 000 000 ✓R	1MA calculating 78% 1MA calculating 50% of previous value 1MA calculating 10% of previous value 1CA simplification 1R correctly rounded OR/OF 1MA calculating 50% 1MA calculating 78% of previous value 1MA calculating 10% of previous value 1CA simplification 1R correctly rounded (5)	M L3 M
		[30]	

QUESTION/VRAAG 5 [26 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.1.1 (a)	F OR/OF G ✓✓ RT	2RT for correct letter (2)	MP L2 M
5.1.1 (b)	C ✓✓ A	2RT correct letter (2)	MP L2 M
5.1.2	$P = \frac{1}{3}$ ✓ A OR/OF 0,333 OR/OF 33,3% ✓ A	1A numerator 1A denominator NPR (2)	P L2 E
5.1.3 (a)	The length of the bookcase is 60 cm and the height of the bookcase is 90 cm. ✓✓ O <i>Die lengte van die boekrak is 60 cm en die hoogte van die boekrak is 90 cm.</i> OR/OF It covers the entire back of the bookcase ✓✓ O <i>Dit bedek die hele agterkant van die boekrak</i>	2O explanation OR/OF 2O explanation (2)	M L4 M
5.1.3 (b)	Dimensions/Afmetings: Width/Breedte = 60 cm ÷ 20 ✓ MA = 3 cm ✓ A Height/Hoogte = 90 cm ÷ 20 = 4,5 cm ✓ CA 3 cm ✓ CA  4,5 cm ✓ CA	1MA using scale 1A simplification 1CA simplification 1CA width drawn 1CA height drawn 1CA shape (6)	M L3 D

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.2	Area of complete piece of wood/<i>Oppervlakte van volledige stuk hout:</i> $= 42 \text{ cm} \times 430 \text{ cm} \quad \checkmark \text{ SF}$ $= 18\,060 \text{ cm}^2 \quad \checkmark \text{ A}$ Area of pieces of one bookcase/<i>Oppervlakte van dele van een boekrak:</i> $\quad \checkmark \text{ MA}$ $= (90 + 60 + 56) \text{ cm} \times (20 + 20) \text{ cm}$ $= 8\,240 \text{ cm}^2 \quad \checkmark \text{ CA}$ Area of unused wood/<i>Oppervlakte van ongebruikte hout:</i> $= 18\,060 - 2(8\,240) \quad \checkmark \text{ MCA}$ $= 1\,580 \text{ cm}^2 \quad \checkmark \text{ CA}$ OR/OF Area complete piece/<i>Oppervlakte van volledige stuk</i> $\quad \checkmark \text{ SF}$ $= 42 \text{ cm} \times 430 \text{ cm} = 18\,060 \text{ cm}^2 \quad \checkmark \text{ A}$ For 1 bookcase: $\checkmark \text{ MA}$ $\left. \begin{array}{l} \text{Area /oppervlakte E \& D} = 60 \text{ cm} \times 20 \text{ cm} \times 2 = 2\,400 \text{ cm}^2 \\ \text{Area /oppervlakte F \& G} = 56 \text{ cm} \times 20 \text{ cm} \times 2 = 2\,240 \text{ cm}^2 \\ \text{Area /oppervlakte A \& B} = 90 \text{ cm} \times 20 \text{ cm} \times 2 = 3\,600 \text{ cm}^2 \end{array} \right\}$ Total/<i>Totaal</i> = $(2\,400 + 2\,240 + 3\,600) \text{ cm}^2 = 8\,240 \text{ cm}^2 \quad \checkmark \text{ CA}$ For 2 bookcases/ Vir 2 boekrakke $= 8\,240 \text{ cm}^2 \times 2 = 16\,480 \text{ cm}^2 \quad \checkmark \text{ MCA}$ Remaining part/ <i>Oorblywende deel</i> $= 18\,060 \text{ cm}^2 - 16\,480 \text{ cm}^2 = 1\,580 \text{ cm}^2 \quad \checkmark \text{ CA}$ OR/OF For 2 bookcases/Vir 2 boekrakke $\checkmark \text{ MA}$ E&D Area /<i>Oppervlakte</i> = $60 \text{ cm} \times 20 \text{ cm} \times 4$ $= 1200 \text{ cm}^2 \times 4 \quad \checkmark \text{ MCA}$ $= 4800 \text{ cm}^2$ A&B Area /<i>Oppervlakte</i> = $90 \text{ cm} \times 20 \text{ cm} \times 4$ $= 1\,800 \text{ cm}^2 \times 4 = 7\,200 \text{ cm}^2$ F&G Area /<i>Oppervlakte</i> = $56 \text{ cm} \times 20 \text{ cm} \times 4$ $= 1\,120 \text{ cm}^2 \times 4 = 4\,480 \text{ cm}^2$ Area complete piece/<i>Oppervlakte van volledige stuk</i> $= 430 \text{ cm} \times 42 \text{ cm} \quad \checkmark \text{ SF}$ $= 18\,060 \text{ cm}^2 \quad \checkmark \text{ A}$ Remaining part/ <i>Oorblywende deel</i> = $\quad \checkmark \text{ MCA}$ $18\,060 \text{ cm}^2 - (4480 + 7200 + 4800) \text{ cm}^2 = 1\,580 \text{ cm}^2 \quad \checkmark \text{ CA}$	1SF substitute into formula 1A simplification 1MA total length and width 1CA simplification 1MCA multiplying by 2 1CA simplification OR/OF 1SF substitute into formula 1A simplification 1MA total length and width 1CA simplification 1MCA multiplying by 2 1CA simplification OR/OF 1MA total length and width 1MCA multiplying by 4 1SF substitute into formula 1A simplification 1MCA subtraction 1CA simplification	M L3 M

(6)

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
	OR/OF Total length of one bookcase/<i>Totale lengte van een boekrak</i>: $= 2(90) + 2(60) + 2(56)$ ✓ MA $= 412$ cm ✓ A Wood left over /<i>Hout wat oorbly</i> $= 430$ cm – 412 cm ✓ MA $= 18$ cm ✓ CA Area of unused wood/<i>Oppervlakte van ongebruikte hout</i>: $= 18$ cm $\times$ 40 cm + (2×430) ✓ MCA $= 720$ cm + 860 cm $= 1\,580$ cm² ✓ CA OR/OF Total length of one bookcase/<i>Totale lengte van een boekrak</i>: $= 2(90\text{cm}) + 2(60\text{cm}) + 2(56\text{cm}) = 412$ cm ✓ A Total width of 2 bookcases /<i>Totale breedte van 2 boekrakke</i> 42 cm – 20 cm – 20 cm ✓ MA $= 2$ cm ✓ CA Wood left /<i>Oorblywende hout</i> $= 430$ cm – 412 cm = 18 cm Area of unused wood/<i>Oppervlakte van ongebruikte hout</i>: $= (412$ cm $\times$ 2 cm) + $(18\text{cm} \times 42$ cm) ✓ MCA $= 1580$ cm² ✓ CA	OR/OF 1MA adding values and multiplied by 2 1A simplification 1MA subtraction 1CA simplification 1MCA adding unused areas 1CA simplification OR/OF 1MA adding values and multiplied by 2 1A simplification 1MA subtraction 1CA simplification 1MCA adding unused areas 1CA simplification (6)	
5.3	Volume of wood per month/<i>Volume hout per maand</i> $= 0,4$ m³ $\times$ $100^3 = 400\,000$ cm³ ✓ C Mass per month/ <i>Massa per maand</i> $= 0,75$ g/ $\times$ $400\,000$ cm³ ✓ MA $= 300\,000$ g $\div$ 1000 $= 300$ kg 1 ton = 1000 kg Number of months to accumulate one ton/ <i>Getal maande om 'n ton mekaar te maak</i> $= 1000$ kg $\div$ 300 kg = $3,33$ ✓ CA VALID/<i>GELDIG</i> ✓ O	1C converting m³ to cm³ 1MA substitution 1CA mass in gram 1C tonnes to kg 1CA number of months 1O verification (6)	M L4 D

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	OR/OF Unused wood produced per month <i>Ongebruikte hout per maand</i> ✓ MA ✓ C $= (0,4 \times 1\,000\,000) \text{ cm}^3 \times 0,75 \text{ g/cm}^3$ $= 300\,000 \text{ g}$ ✓ CA $= 300\,000 \div 1\,000$ $= 300 \text{ kg}$ $= 300 \div 1\,000$ $= 0,3 \text{ ton}$ ✓ C Number of tons in 3 months / <i>Aantal ton in 3 maande</i> $= 0,3 \times 3 = 0,9$ ✓ CA VALID/ GELDIG ✓ O OR/OF $0,4 \text{ m}^3 \times 3 = 1,2 \text{ m}^3$ ✓ A Mass of used wood/<i>Massa van ongebruikte hout</i> ✓ MA $= (1,2 \times 100 \times 100 \times 100 \times 0,75) \text{ g}$ ✓ C $= 900\,000 \text{ g}$ ✓ CA $= 900 \text{ kg}$ ✓ C $< 1000 \text{ kg}$ His statement is correct/<i>Sy stelling is korrek</i> ✓ O OR/OF 1 ton = 1 000 000 g ✓ C Volume = $0,4 \text{ m}^3 \times 100^3 = 400\,000 \text{ cm}^3$ / month/<i>maand</i> ✓ C Mass/<i>Massa</i> = $(0,75 \times 400\,000) \text{ g} = 300\,000 \text{ g}$ ✓ MA Number of months/ <i>Getal maande</i> ✓ CA $= \frac{1\,000\,000 \text{ g}}{300\,000 \text{ g}}$ $= 3,3 \text{ months}$ ✓ CA Statement is valid/<i>Sy stelling is korrek</i> ✓ O	OR/OF 1MA substitution 1C conversion 1CA mass in grams 1C convert to tonnes 1CA tons in 3 months 1O verification OR/OF 1A volume in 3 months 1MA substitution 1C converting m^3 to cm^3 1CA mass in g 1C converting to kg in 3 months 1O verification OR/OF 1C converting to gram 1C converting m^3 to cm^3 1MA substitution 1CA mass in g 1CA number of months 1O verification	
		(6)	
		[26]	
		TOTAL/TOTAAL: 150	