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./*Penalisering, bv. vir geen eenhede, verkeerde afronding, ens.* |
| **NPR** | No penalty for correct rounding/*Geen penalisering vir korrekte afronding nie* |
| **NPU** | No penalty for omitting unit, but wrong unit is penalised/*Geen penaliseringe 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.***

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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.
- 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/*Oplossing*** | **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<br>Quarter past two in the afternoon.<br>*Kwart oor twee in die middag.*<br><br>**OR/OF**<br>✓ RT ✓ A<br>Fifteen minutes after two in the afternoon.<br>*Vyftien minute na twee namiddag.* | 1RT correct time in words<br>1A correct time of day<br><br>**OR/OF**<br><br>1RT correct time in words<br>1A correct time of day (2) | M L1 E |
| 1.2.2 | Number of passengers/*Aantal passasiers* = $33\frac{1}{3}$ % × 189 ✓ MA<br>= 63 ✓ A<br><br>**OR/OF**<br>Number of passengers/*Aantal passasiers* = $\frac{1}{3}$ × 189 ✓ MA<br>= 63 ✓ A | 1MA multiply with $33\frac{1}{3}$ %<br>1A simplification<br><br>**OR/OF**<br>1MA multiply with $\frac{1}{3}$<br>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 |

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| Q/V | Solution/*Oplossing* | Explanation/*Verduideliking* | T/L |
|---|---|---|---|
| 1.3.1 | (a) R ✓ A<br>(b) S ✓ A<br>(c) U ✓ A<br>(d) P ✓ A<br>(e) Q ✓ A<br>(f) T ✓ A | 1A correct letter<br>1A correct letter<br>1A correct letter<br>1A correct letter<br>1A correct letter<br>1A correct letter<br>(6) | MP<br>L1<br>M |
| 1.3.2 | C ✓✓ A | 2A correct formula<br>(2) | M<br>L1<br>E |
| 1.3.3 | Length of geyser/*Lengte van waterverwarmer*<br>= 1,2 m × 1 000 ✓ MA<br>= 1 200 mm ✓ A | 1MA multiply by 1 000<br>1A conversion<br>(2) | M<br>L1<br>E |
| | | **[28]** | |

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

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

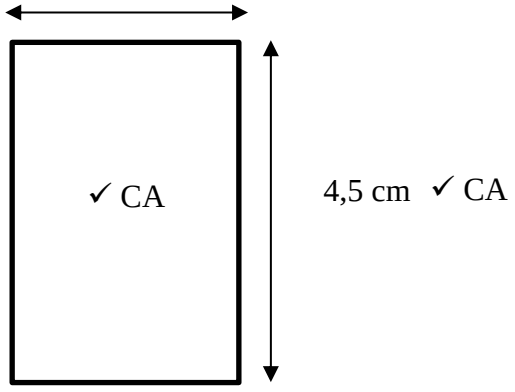
| **QUESTION/*VRAAG* 3 [32 MARKS/*PUNTE*]** | | | |
|---|---|---|---|
| **Q/*V*** | **Solution/*Oplossing*** | **Explanation/*Verduideliking*** | **T/L** |
| 3.1.1 | ✓ MA<br>13:12 – 3 hours and 27 min/*3 ure en 27 min*<br>= 09:45 ✓A<br><br>**OR/OF**<br>Time = 13,2 – 3,45 = 9,75 hours ✓ MA<br>= 09:45 ✓A | 1MA subtracting time<br>1A simplification<br><br>**OR/OF**<br>1MA subtracting the hours<br>1A simplification<br>**AO**<br>(2) | M<br>L2<br>E |
| 3.1.2 | ✓RT ✓ MA<br>Number/Getal = 1 + 2 + 3 + 4 + 5 + 6 + 7<br>= 28 ✓CA<br><br>**OR/OF**<br>✓RT<br>Number/*Getal* = $\frac{7(1+7)}{2}$<br>= 7 × 4 ✓ MA<br>= 28 ✓CA | 1RT interpreting pattern<br>1MA adding values<br>1CA simplification<br><br>**OR/OF**<br>1RT interpreting pattern<br>1MA multiplication of values<br>1CA simplification<br>**AO**<br>(3) | M<br>L2<br>E |
| 3.1.3 | Height in cm/*Hoogte in cm* = 240 mm<br>= 24 cm ✓C<br>✓ RT<br>Area/*Oppervlakte* = $\frac{1}{2}$(28 cm × 24 cm) ✓ SF<br>= 336 cm$^2$ ✓CA<br><br>**OR/OF**<br>✓ RT ✓ SF<br>Area/*Oppervlakte* = ½ × 280 mm × 240 mm<br>= 33 600 mm$^2$ ✓CA<br>= 336 cm$^2$ ✓C | 1C conversion<br>1RT 28<br>1SF substitution in formula<br>1CA simplification<br><br>**OR/OF**<br>1SF substitution in formula<br>1 RT 280<br>1CA simplification<br>1C conversion<br>(4) | M<br>L2<br>M |
| 3.1.4 | ✓ MA<br>Area of C/*Oppervlakte van C* = 30 240 mm$^2$ × 1,6<br>✓ CA<br>= 48 384 mm$^2$<br><br>Total Area/*Totale oppervlakte*<br>✓C<br>= 48 384 mm$^2$ + 30 240 mm$^2$ + 33 600 mm$^2$ ✓ MCA<br>= 112 224 mm$^2$ ✓ CA<br>**OR/OF** | **CA from 3.1.3**<br>1MA multiply by 1,6<br>1CA simplification<br><br>1C convert to mm$^2$<br>1MCA adding values<br>1CA simplification<br>**OR/OF** | M<br>L3<br>M |

| Q/*V* | Solution/*Oplossing* | Explanation/*Verduideliking* | T&L |
|---|---|---|---|
| | Part/*Deel* B: 30 240 $mm^2 \div 10^2 = 302,4\ cm^2$<br>✓ MA<br>Part /*Deel* C: $302,4\ cm^2 \times 1,6 = 483,84\ cm^2$ ✓ CA<br>✓ MCA ✓ CA<br>Total/*Totaal*: $(336 + 483,84 + 302,4)\ cm^2 = 1\ 122,24\ cm^2$<br>∴ $(1\ 122,24 \times 100)\ mm^2 = 112\ 224\ mm^2$ ✓ C | 1MA multiply by 1,6<br>1CA simplification<br>1MCA adding values<br>1CA simplification<br>1C convert to $mm^2$<br>(5) | |
| 3.1.5 | 9 + 7 + 28 + 8 + 22 = 74 ✓ A<br>P = $\frac{16}{74}$ ✓ MA × 100 % ✓ MA<br>≈ 21,62% ✓CA<br>**OR/OF**<br>9 + 7 + 28 + 8 + 22 = 74 ✓ A<br>P(red) = $\frac{9}{74}$ × 100% ✓ MA<br>= 12,16216216%<br>P(green) = $\frac{7}{74}$ × 100% ✓MA<br>= 9,459459459%<br>P(red or green) ≈ 12,16 % + 9,46%<br>= 21,62% ✓CA<br>**OR/OF**<br>9 + 7 + 28 + 8 + 22 = 74 ✓ A<br>✓ MA<br>P(red or green) = $\frac{9}{74} + \frac{7}{74}$ ✓ MA<br>= 0,1216216… + 0,945945…<br>= 0,216216… × 100%<br>= 21,62% ✓CA | 1A correct number of circles<br>1MA correct numerator<br>1MA concept percentage<br>1CA simplification<br>**OR/OF**<br>1A correct number of circles<br>1MA P(red)<br>1MA P(green)<br>1CA simplification<br>**OR/OF**<br>1A correct number of circles<br>1MA P(red)<br>1MA P(green)<br>1CA simplification<br>(4) | P<br>L2<br>M |
| 3.2.1 | Radius of small circle/ *Radius van klein sirkel*<br>= $\frac{4}{7}$ × 14 mm ✓MA<br>= 8 mm ✓A | 1MA multiplication by 14<br>1A correct length<br>**AO**<br>(2) | M<br>L1<br>E |

| Q/*V* | Solution/*Oplossing* | Explanation/*Verduideliking* | T&L |
|---|---|---|---|
| 3.2.2 | Circumference/*Omtrek* = 3,142 × 2 × 14 mm ✓SF<br>= 87,976 mm ✓CA<br>≈ 88 mm ✓R | 1SF substitution in formula<br>1CA simplification<br>1R rounding<br>(3) | M<br>L2<br>M |
| 3.2.3 | Area of material/*Oppervlakte van materiaal*<br>✓C<br>= 30 cm × 137 cm ✓SF<br>= 4 110 cm² ✓CA<br><br>Total area of all circles/*Totale oppervlakte van alle sirkels*<br>✓SF ✓MA ✓MA<br>= 3,142 × (1,4 cm)² × 48 × 2 × 2<br>= 1 182,40 cm² ✓CA<br><br>Area of off-cuts/*Oppervlakte van oorblyfsels*<br>= 4 110 cm² – 1 182,40 cm²<br>= 2 927,60 cm² ✓CA<br>✓O<br>Her statement is CORRECT/*Haar stelling is KORREK*<br><br>**OR/OF**<br><br>Area of material/*Oppervlakte van materiaal*<br>✓C<br>= 30 cm × 137 cm ✓SF<br>= 4 110 cm² ✓CA<br><br>Area of circle /*Oppervlakte van sirkel* = 3,142 × radius²<br>= 3,142 × (1,4 cm)² ✓SF<br>=6,15832 cm²<br>✓MA<br>Number of circles / *Getal sirkels* = 48 × 2 = 96<br>For both sides/ *Vir beide kante* = 96 × 2 = 192 ✓MA<br><br>Total area/ *Totale oppervlakte* = 6,15832 cm² × 192<br>= 1 182,39744 cm² ✓CA<br><br>Area of off-cuts/*Oppervlakte van oorblyfsels*<br>= 4 110 – 1 182,439744<br>≈ 2 927,60 cm² ✓CA<br>✓O<br>Her statement is CORRECT/*Haar stelling is KORREK* | 1C converting to cm<br>1SF substitution in formula<br>1CA correct area<br><br>1SF substitution in formula<br>1MA multiplying by 48<br>1MA multiplying by 2 × 2<br>1CA simplification<br><br>1CA area of off cuts<br><br>1O opinion<br><br>**OR/OF**<br><br>1C converting to cm<br>1SF substitution in formula<br>1CA correct area<br><br>1SF substitution in formula<br><br>1MA multiplying by 48<br><br>1MA multiplying 96 by 2<br><br>1CA simplification<br><br>1CA area of off cuts<br>1O opinion<br>(9) | M<br>L4<br>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<br>Kimberley and/*en* Britstown | 2A 1st correct town<br>1A 2nd correct town (3) | MP L2 E |
| 4.1.3 | Provincial borders are indicated by a broken line / dotted line/ dashed line ✓✓ O<br>*Provinsiale grense word deur 'n gebroke lyn/ stippellyn voorgestel* | 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*<br>✓ MA<br>= 19:00 + 14 hours 25 min/*14 ure 25 min*<br>= 09:25<br>✓ A ✓ A<br>16 June 2023 at 09:25 / *16 Junie 2023 teen 09:25*<br>**OR/OF**<br>From/*Van* 19:00 to 24:00 = 5 hours/*ure* ✓ A<br>14 hours/ *ure* 25 min – 5 hours/*ure*<br>= 09:25<br>✓ A ✓ A<br>16 June 2023 at 09:25 / *16 Junie 2023 teen 09:25* | 1MA adding the flight time<br>1A 16 June<br>1A arrival time<br>**OR/OF**<br>1A 5 hours<br>1A 16 June<br>1A arrival time<br>**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***<br>770 km = speed/*spoed* × 14 hours 25 min/*14 ure 25 min*<br>✓ SF<br>Speed/*Spoed* $= \frac{770\text{ km}}{14\text{ hours }25\text{ min}}$ ✓ S<br>$= \frac{770\text{ km}}{14{,}4166...\text{ hours}}$ ✓C<br>$\approx 53{,}41$ km/h ✓CA | 1SF substitute into formula<br>1S change subject of formula<br>1C convert minutes to hours<br>1CA simplification (4) | M L2 D |

| Q/*V* | Solution/*Oplossing* | Explanation/*Verduideliking* | T&L |
|---|---|---|---|
| 4.2.5 | 1 mile/*myl* = 1,60934 km<br>311,72 miles/*myle* = *?* km<br>*?* = 311,72 × 1,60934 km ✓MA<br>= 501,6634… km ✓A<br><br>Extra distance/*Ekstra afstand*<br>= 770 km – 501,6634… km ✓MCA<br>= 268,336… km ✓CA<br><br>INVALID/*NIE GELDIG NIE* ✓O<br><br>**OR/OF**<br><br>Distance/ *Afstand* = 311,72 × 1,60934 km ✓MA<br>= 501,6634… km ✓A<br><br>Total distance/ *Totale afstand*<br>= 501,6634… km + 268,13 km ✓MCA<br>= 769,7934… km ✓CA<br><br>INVALID/ *NIE GELDIG NIE* ✓O | 1MA multiply with conversion factor<br>1A simplification<br><br>1MCA subtracting<br>1CA simplification<br><br>1O verification<br><br>**OR/OF**<br><br>1MA multiply with 1,60934<br>1A simplification<br><br>1MCA adding 268,13<br><br>1CA simplification<br><br>1O verification<br><br>(5) | M<br>L4<br>M |
| 4.2.6 | Number of adults/*Aantal volwassenes*<br>= 78% × 333 million/*miljoen* ✓MA<br>= 259,74 million/*miljoen*<br><br>Number of adult women/*Aantal volwasse vroue*<br>= 50% × 259,74 million/*miljoen* ✓MA<br>= 129,87 million/*miljoen*<br><br>Number shorter than flamingo/*Aantal korter as flamink*<br>=10% × 129,87 million/*miljoen* ✓MA<br>= 12,987 million/*miljoen* ✓CA<br>≈ 13 million/*miljoen* ✓R<br><br>**OR/OF**<br><br>✓MA<br>Number of women/ *vroue* = 50% × 333 000 000<br>= 166 500 000 ✓MA<br>Number of adults/ *volwasse* = 78% × 166 500 000<br>= 129 870 000<br>Number shorter / *korter* = 10% × 129 870 000 ✓MA<br>= 12 987 000 ✓CA<br>≈ 13 000 000 ✓R | 1MA calculating 78%<br><br>1MA calculating 50% of previous value<br><br>1MA calculating 10% of previous value<br>1CA simplification<br>1R correctly rounded<br><br>**OR/OF**<br><br>1MA calculating 50%<br><br>1MA calculating 78% of previous value<br>1MA calculating 10% of previous value<br>1CA simplification<br>1R correctly rounded<br><br>(5) | M<br>L3<br>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 | ✓ A<br>P = $\frac{1}{3}$ **OR/OF** 0,333 **OR/OF** 33,3%<br>✓ A | 1A numerator<br>1A denominator<br>**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<br>*Die lengte van die boekrak is 60 cm en die hoogte van die boekrak is 90 cm.*<br>**OR/OF**<br>It covers the entire back of the bookcase ✓✓ O<br>*Dit bedek die hele agterkant van die boekrak* | 2O explanation<br>**OR/OF**<br>2O explanation (2) | M L4 M |
| 5.1.3 (b) | Dimensions/*Afmetings:*<br>Width/*Breedte* = 60 cm ÷ 20 ✓ MA<br>= 3 cm ✓ A<br>Height/*Hoogte* = 90 cm ÷ 20<br>= 4,5 cm ✓CA<br>3 cm ✓ CA<br><br> | 1MA using scale<br>1A simplification<br>1CA simplification<br>1CA width drawn<br>1CA height drawn<br>1CA shape (6) | M L3 D |

| Q/*V* | Solution/*Oplossing* | Explanation/*Verduideliking* | T&L |
|---|---|---|---|
| 5.2 | Area of complete piece of wood/*Oppervlakte van volledige stuk hout:*<br>= 42 cm × 430 cm ✓ SF<br>= 18 060 $cm^2$ ✓ A<br><br>Area of pieces of one bookcase/*Oppervlakte van dele van een boekrak:*<br>✓ MA<br>= (90 + 60 + 56) cm × (20 + 20) cm<br>= 8 240 $cm^2$ ✓ CA<br><br>Area of unused wood/*Oppervlakte van ongebruikte hout:*<br><br>= 18 060 – 2(8 240) ✓ MCA<br>= 1 580 $cm^2$ ✓ CA<br><br>**OR/OF**<br>Area complete piece/*Oppervlakte van volledige stuk*<br>✓ SF<br>= 42 cm × 430 cm = 18 060 $cm^2$ ✓ A<br><br>For 1 bookcase: ✓ MA<br>Area /*oppervlakte* E & D = 60 cm × 20 cm × 2 = 2 400 $cm^2$<br>Area /*oppervlakte* F & G = 56 cm × 20 cm × 2 = 2 240 $cm^2$<br>Area /*oppervlakte* A & B = 90 cm × 20 cm × 2 = 3 600 $cm^2$<br>Total/*Totaal* = (2 400 + 2 240 + 3 600) $cm^2$ = 8 240 $cm^2$ ✓ CA<br><br>For 2 bookcases/ Vir 2 boekrakke<br>= 8 240 $cm^2$ × 2 = 16 480 $cm^2$ ✓ MCA<br><br>Remaining part/ *Oorblywende deel*<br>= 18 060 $cm^2$ – 16 480 $cm^2$ = 1 580 $cm^2$ ✓ CA<br>**OR/OF**<br><br>For 2 bookcases/*Vir 2 boekrakke* ✓ MA<br>E&D Area /*Oppervlakte*= 60 cm × 20 cm × 4<br>= 1200 $cm^2$ × 4 ✓ MCA<br>= 4800 $cm^2$<br>A&B Area /*Oppervlakte* = 90 cm × 20 cm × 4<br>= 1 800 $cm^2$ × 4 = 7 200 $cm^2$<br>F&G Area /*Oppervlakte* = 56cm × 20 cm × 4<br>= 1 120 $cm^2$ × 4 = 4 480 $cm^2$<br>Area complete piece/*Oppervlakte van volledige stuk*<br>= 430 cm × 42 cm ✓ SF<br>= 18 060 $cm^2$ ✓ A<br>Remaining part/ *Oorblywende deel* =<br>✓ MCA<br>18 060 $cm^2$– (4480 + 7200 + 4800) $cm^2$ = 1 580 $cm^2$ ✓ CA | 1SF substitute into formula<br>1A simplification<br><br>1MA total length and width<br>1CA simplification<br><br>1MCA multiplying by 2<br>1CA simplification<br><br>**OR/OF**<br>1SF substitute into formula<br>1A simplification<br><br>1MA total length and width<br><br>1CA simplification<br><br>1MCA multiplying by 2<br><br>1CA simplification<br><br>**OR/OF**<br>1MA total length and width<br>1MCA multiplying by 4<br><br>1SF substitute into formula<br>1A simplification<br><br>1MCA subtraction<br>1CA simplification<br>(6) | M<br>L3<br>M |

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

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

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