

# basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/SENIOR SERTIFIKAAT
NATIONAL SENIOR CERTIFICATE/
NASIONALE SENIOR SERTIFIKAAT

GRADE/GRAAD 12

## MATHEMATICAL LITERACY P1/ WISKUNDIGE GELETTERDHEID V1

**NOVEMBER 2020** 

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   |
| С           | 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                         |
| 0           | 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 consistent with accuracy/ Afronding met volgehoue akkuraatheid                     |

This marking guideline consists of 17 pages. *Hierdie nasienriglyne bestaan uit 17 bladsyes*.

### NSC/NSS - Marking Guidelines/Nasienriglyne

#### 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.
- CA marks only apply if at least 1 correct value is used.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.

#### 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.
- CA geld alleenlik wanneer ten minste 1 korrekte waarde gebruik is.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.

| QUE   | QUESTION/VRAAG 1 [30 MARKS/PUNTE] ANSWER ONLY FULL MARKS                                      |  |         |  |
|-------|---|--|---------|--|
| Q/V   | Solution/Oplossing  | Explanation/Verduideliking                                   | T&L     |  |
| 1.1.1 | Vertical bar graph/Vertikale staafgrafiek. Bar/Balk/Staaf, Column graph/Kolomgrafiek ✓✓ A     | 2A bar graph (2)   | D<br>L1 |  |
| 1.1.2 | ✓MA<br>A = R110 + R11<br>= R121 ✓CA   | 1MA adding correct values 1CA Simplification (2)             | F<br>L1 |  |
| 1.1.3 | ✓MA<br>B = R141 – R126<br>= R15 ✓CA   | 1MA subtracting correct values 1CA simplification (2)        | F<br>L1 |  |
| 1.1.4 | Difference/Verskil<br>R126 – R110 ✓ MA<br>= R16 ✓ A   | 1MA subtract lowest from<br>highest<br>1A simplification (2) | F<br>L1 |  |
| 1.1.5 | Increased Delivery fee/Verhoogde afleweringsfooi = R10,00 × 6,32% ✓ MA = R0,632 = R0,63 ✓ A   | 1MA calculating percentage                                   | F<br>L1 |  |
|       | OR/OF $= R10,00 \times \frac{6,32}{100} \checkmark M$ $= R0,632$ $= R0,63 \checkmark A$ OR/OF | 1A simplification  OR/OF                                     |         |  |

| Q/V   | Solution/Oplossing   | Explanation/Verduideliking            | T&L     |
|-------|--|---------------------------------------|---------|
| 1.1.5 |  |                                       |         |
|       | Increased delivery fee/Verhoogde afleweringskoste                      |                                       |         |
|       | $= R10 \times 1,0632 \checkmark MA$                                    | 1MA calculating percentage            |         |
|       | = R10,632  |                                       |         |
|       | Increase in delivery fee/Verhooging in                                 |                                       |         |
|       | afleweringskoste   |                                       |         |
|       | = R10,63 - R10,00  |                                       |         |
|       | = R0,63 ✓A   | 1A simplification (2)                 |         |
|       |  | (2)                                   | D       |
| 1.2.1 | 2008 ✓✓RT  | 2RT reading correct year              | L1      |
|       | (34A /DT   | 1MA subtracting correct values (2)    | F       |
| 1.2.2 | $\checkmark$ MA $\checkmark$ RT Difference/ $Verskil = R11,04 - R4,31$ | 1RT correct values                    | L1      |
|       | = R6,73 ✓CA  | 1CA simplification                    |         |
|       | ✓MA  | 1MA concept of ratio in correct order | F       |
| 1.2.3 | 5,56: 12,48 VRT  | 1RT correct values                    | L1      |
|       | 1 : 2,24 <b>OR/</b> <i>OF</i> 0,45 : 1 ✓ CA                            | 1CA simplification (3)                |         |
| 1.2.4 | Total/Totaal = 13,45 × R4,00 ✓ MA<br>= R53,80 ✓ CA                     |                                       | F<br>L1 |
|       | OR/OF  |                                       |         |
|       | R : ℓ  | 1MA multiplying correct values        |         |
|       | 4 : 1 <b>✓</b> MA  | 1CA simplification                    |         |
|       | 53,80 : 13,45  |                                       |         |
|       | Total cost = R53,80 ✓CA  |                                       |         |
|       | ,  | (2)                                   | D       |
| 1.2.5 | 2007 ✓✓RT  | 2RT reading correct year (2)          | D<br>L1 |

| $\mathbf{Q}/V$ | Solution/Oplossing   | Explanation/Verduideliking |      | T&L |
|----------------|--|----------------------------|------|-----|
|                | ✓A ✓A  |                            |      | MP  |
| 1.3.1          | Strip Map (Chart)/Strookkaart ✓✓ A                                     | 2A strip map (chart)       |      | L1  |
|                |  |                            | (2)  |     |
|                |  |                            |      | M   |
| 1.3.2          | Distance in metre/Afstand in meter                                     | 1MA multiplying by 1 000   |      | L1  |
|                | $= 779 \times 1000 \checkmark MA$                                      | 1A simplifying             |      |     |
|                | = 779 000 ✓A   | NPU                        |      |     |
|                |  |                            | (2)  |     |
|                | ✓A<br>Ladismith <b>AND/EN</b> Calitzdorp                               |                            |      | MP  |
| 1.3.3          | Ladismith AND/EN Calitzdorp  | 1A correct town            |      | L1  |
| (a)            |  | 1A correct town            |      |     |
|                |  |                            | (2)  |     |
|                |  |                            |      | MP  |
| 1.3.3          | The distance from Riversdale to Oudtshoorn/                            |                            |      | L1  |
| (b)            | Afstand vanaf Riversdal na Oudtshoorn                                  |                            |      |     |
|                |  |                            |      |     |
|                | $= 82 \text{ km} + 45 \text{ km} + 53 \text{ km} \checkmark \text{MA}$ | 1MA adding correct values  |      |     |
|                | = 180 km ✓CA   | 1CA simplification         | (2)  |     |
|                |  |                            | (2)  |     |
|                |  |                            | [30] |     |

| Q/V   | STION/VRAAG 2 [42 MARKS/PUNTE] Solution/Oplossing                        | Explanation/Verduideliking        | T&L |
|-------|--|-----------------------------------|-----|
| · ·   | Solution opiossing   | Explanation voluntarities         | F   |
| 2.1.1 | R4 656,71 ✓✓A  | 2A correct balance                | L1  |
| 2.1.1 | R4 030,71 * * A  | (2)                               | 21  |
|       |  |                                   | F   |
| 2.1.2 | Full date/Volle datum  |                                   | L1  |
|       | 1 February/Februarie 2019 ✓✓ A   | 2A full date                      |     |
|       | 01/02/19   |                                   |     |
|       | 01/02/2019   | (2)                               |     |
|       |  | (2)                               | F   |
| 2.1.3 | R1 215,36 ✓✓A  | 2A correct amount                 | L1  |
|       |  |                                   |     |
|       |  | (2)                               |     |
| 214   | D2 750 00 ././ A   | 2.4                               | F   |
| 2.1.4 | R3 750,00 ✓✓A  | 2A correct amount (2)             | L1  |
|       |  | (2)                               | F   |
| 2.1.5 | FNB electroninc payments/ENB elektroniese betaling                       |                                   | L1  |
|       | ✓RT ✓RT  | 1RT 1 <sup>st</sup> value correct |     |
|       | R101,99 + R698,01  | 1RT 2 <sup>nd</sup> value correct |     |
|       | $= R800,00 \checkmark A$   | 1A simplification                 |     |
|       |  | <b>AO</b> (3)                     |     |
|       |  | (3)                               | F   |
| 2.1.6 | Price excluding VAT/Prys BTW uitgesluit                                  |                                   | L2  |
|       | ./рт   |                                   |     |
|       | $= R4000,00 \times \frac{100}{115} \checkmark MA$                        |                                   |     |
|       | $\frac{1}{115}$  |                                   |     |
|       | = R3 478,26 ✓CA  |                                   |     |
|       | OR/OF  |                                   |     |
|       | D' 1 1' MATE/D DETHY '' 1 ''   |                                   |     |
|       | Price excluding VAT/Prys BTW uitgesluit                                  | 1RT price of item                 |     |
|       | ✓RT<br>R4000   | 1MA calculating VAT               |     |
|       | $\frac{R4000}{1,15} \checkmark MA$                                       | 1CA price excluding VAT <b>AO</b> |     |
|       |  | AU                                |     |
|       | = R3 478,26 ✓CA  |                                   |     |
|       | OR/OF  |                                   |     |
|       | ✓RT 15   |                                   |     |
|       | VAT amount/BTW bedrag = $R4000,00 \times \frac{15}{115}$ $\checkmark$ MA |                                   |     |
|       | = R521,74  |                                   |     |
|       | Price excluding VAT/Prys BTW uitgesluit                                  |                                   |     |
|       | = R4 000 – R521,74   |                                   |     |
|       | = R3 478,26 ✓CA  |                                   |     |
|       |  | (2)                               |     |
|       |  | (3)                               |     |

| Q/V      | Solution/Oplossing   | Explanation/Verduideliking  | T&L     |
|----------|--|---|---------|
| 2.2.1    | South African Revenue Services/SARS Revenue Services  Suid Afrikaanse Inkomstedienste/SAID Inkomste(belasting)dienste  | 2A name (2)   | F<br>L1 |
| 2.2.2    | 2 / TWO / TWEE ✓✓A   |   | F<br>L1 |
|          | OR/OF  | 2A correct bracket  |         |
|          | 7 / SEVEN / SEWE   | (2)   |         |
| 2.2.3    | Annual tax before rebates/  Jaarlikse inkomstebelasting voor belastingkortings   | CA from question 2.2.2  | F<br>L3 |
|          | = R35 253 + 26% of taxable income above 195 850<br>= R35 253 + 26% × (R305 174,44 − R195 850) ✓SF<br>= R35 253 + R28 424,35 ✓M<br>= R63 677,35 ✓CA                 |   |         |
|          | Monthly tax before rebates/ Maandelikse inkomstebelasting voor belastingkortings   |   |         |
|          | = R63 677,35 ÷ 12 ✓ MCA<br>= R5 306,45 ✓ CA  | 1SF correct substitution 1M adding correct amounts 1CA simplification |         |
|          | OR/OF  | 1 0.1 3p  |         |
|          | Annual tax before rebates/  Jaarlikse inkomstebelasting voor belastingkortings   | 1MCA dividing by 12<br>1CA simplification<br>NPR                      |         |
|          | = R532 041 + 45% of taxable income above 1 500 000<br>= R532 041 + 45% × (R3 662 093,28 − R1 500 000) ✓ SF<br>= R532 041 + R972 941,98 ✓ M<br>= R1 504 982,98 ✓ CA |   |         |
|          | Monthly tax before rebates/ Maandelikse inkomstebelasting voor belastingkortings   |   |         |
|          | = R1 504 982,98 ÷ 12 ✓ MCA<br>= R125 415,25 ✓ CA   | (5)   |         |
| 2.2.4(a) | ✓✓RT Primary rebate/Primêre korting <b>OR/OF</b> R14 067,00  | 2RT reading from the table (2)  | F<br>L1 |
| 2.2.4(b) | 3/THREE/ <i>DRIE</i> ✓✓A   | 2A correct number of rebates (2)                                      | F<br>L1 |

| Q/V       | Solution/Oplossing  | Explanation/Verduideliking               | T&L     |
|-----------|---|--|---------|
| 2.3.1     | Selling price of one photo/Verkoopprys van een foto   |  | F       |
|           | ✓MA  P500 P1000 P1500 P2500 P2000   |  | L1      |
|           | $\begin{array}{ c c c c c c c c c c c c c c c c c c c$  | 1MA dividing                             |         |
|           | = R20 ✓A  | 1A simplification <b>AO</b>              |         |
|           | OR/OF   |  |         |
|           | $R4\ 000 \div 200 \checkmark MA$ $= R20 \checkmark A$   | (2)                                      |         |
|           |   | CA from Question 2.3.1                   | F       |
| 2.3.2     | Total income received/ <i>Totale inkomste ontvang</i> :   |  | L2      |
|           | ✓CA ✓A  | 1CA R20,00                               |         |
|           | Income = $R20,00 \times n$ , where $n =$ number of photos<br>Income = $R20,00 \times$ number of photos        | 1A multiply by unknown                   |         |
|           | $Inkomste = R20,00 \times n, waar n = aantal foto's$ $Inkomste = R20,00 \times aantal foto's$                 |  |         |
| 2.3.3     |   | (2)                                      | F       |
| (a)       | R5,00 ✓✓A   | 2A variable cost <b>NPU</b>              | L1      |
|           |   | (2)                                      | _       |
| 2.3.3 (b) | A: Expenses = R1 125 + number of photos $\times$ R5,00<br>A: Uitgawes = R1 125 + aantal foto's $\times$ R5,00 |  | F<br>L2 |
|           | $\checkmark$ SF<br>A = R1 125 + (80 × R5,00)  | 1SF substituting value                   |         |
|           | $A = R1 \ 125 + R400 \checkmark MCA$<br>= R1 525 $\checkmark$ CA  | 1MCA adding values 1CA simplification AO |         |
|           |   | (3)                                      |         |
| 2.3.4     | √√A   |  | F       |
| (a)       | Income and expenses of Ella's photography business  | 2A correct heading                       | L1      |
|           | Inkomste en uitgawes van Ella se fotografiebesigheid  | (2)                                      |         |
|           |   | (2)                                      | F       |
| 2.3.4 (b) | X ✓✓A   | 2A correct graph (2)                     | L1      |
| 224       |   | 2.4                                      | F       |
| 2.3.4 (c) | 75 photographs/foto's ✓✓A   | 2A correct number of photographs         | L1      |
|           |   | photographs (2)                          |         |
|           |   | [42]                                     |         |

| Q/V   | Solution/Oplossing  | Explanation/Verduideliking                                 | T&L     |
|-------|---|--|---------|
| 3.1.1 | Legs of ottomans/Pote van ottomans:  2 cubic/kubieke ottomans × 4 legs/pote |  | M<br>L1 |
|       | = 8 legs/pote $\checkmark$ A  | 1A number of legs  |         |
|       | 1 retangular/reghoekige ottoman × 6 legs/pote = 6 legs/pote                 |  |         |
|       | 8 + 6 ✓MA<br>= 14 legs/pote ✓CA   | 1MA adding 6 legs<br>1CA total number of legs<br><b>AO</b> |         |
| 3.1.2 |   | (3)  | M       |
|       | Radius = $\frac{75 \text{ mm}}{2}$ $\checkmark$ MA                          | 1MA concept of radius                                      | L1      |
|       | $= 37.5 \text{ mm} / 3.75 \text{ cm} \checkmark \text{A}$                   | 1A simplification AO NPR                                   |         |
| 2.1.2 |   | (2)  | 3.6     |
| 3.1.3 | Total height/Totale hoogte:   |  | M<br>L1 |
|       | 50 cm + 12 cm ✓C<br>= 62cm ✓A   |  |         |
|       | OR/OF   | 1C converting to cm 1A finding the height                  |         |
|       | Total height/Totale hoogte:   |  |         |
|       | = 120 mm + 500 mm   |  |         |
|       | = 620 mm ✓ A<br>= 62 cm ✓ C   | AO   |         |
|       |   | (2)  |         |

| Q/V | Solution/Oplossing   | Explanation/Verduideliking | T&L |
|-----|--|----------------------------|-----|
| M   |  |                            |     |
| L2  | Area/Oppervlakte   |                            |     |
|     | $ \begin{array}{c c} \checkmark A & \checkmark A \\ (50\text{cm} \times 50\text{cm}) + (120\text{cm} \times 50\text{cm}) \end{array} $ | 1A area                    |     |
|     | 2 500 cm2 + 6 000 cm2  | 1A area                    |     |
|     | Total Area/Totale Oppervlakte  |                            |     |
|     | $(10 \times 2500 \text{ cm}^2) + (2 \times 6000 \text{ cm}^2) \checkmark \text{M}$   | 1M multiplying correct     |     |
|     | 25 000 cm2 + 12 000 cm2  | values                     |     |
|     | 37 000 cm2 ✓CA   | 1M adding the two areas    |     |
|     | OR/OF  | 1CA simplification         |     |
|     |  | OR/OF                      |     |
|     | 8 square sides/vierkantige sye $\times$ ( $50 \times 50$ )   |                            |     |
|     | $= 20\ 000\ \text{cm}^2 \ \checkmark \text{A}$   | 1A simplification          |     |
|     | 2  |                            |     |
|     | 2 rectangular sides/reghoekige sye $\times$ ( 120 $\times$ 50 )  |                            |     |
|     | $= 12000 \text{ cm}^2 \checkmark \text{A}$   | 1A simplification          |     |
|     | 2 square sides / vierkantige sye $\times$ ( $50 \times 50$ )   |                            |     |
|     | $= 5000 \text{ cm}^2 \checkmark A$   | 1A simplification          |     |
|     |  | 1                          |     |
|     | Total area to be painted/Totale area wat geverf moet word:   | 43.6 1.12 11 1             |     |
|     | $= 20\ 000\ \text{cm}^2 + 12\ 000\ \text{cm}^2 + 5\ 000\ \text{cm}^2$  | 1M adding all values       |     |
|     | $= 37\ 000\ \text{cm}^2  \checkmark \text{MA}$   | 1MA finding total area     |     |
|     |  |                            |     |
|     | OR/OF  | OR/OF                      |     |
|     | Total perimeter/Totale Omtrek  |                            |     |
|     | ✓A ✓M  | 1A all correct values      |     |
|     | = $(50+50+50+50+50+50+50+50+120 +50+50+120)$ cm<br>= $740$ cm $\checkmark$ A   | 1M adding correct values   |     |
|     | - / TO CIII V A  | 1A simplification          |     |
|     | Total area to be painted/ <i>Totale area wat geverf moet word</i> :  |                            |     |
|     | 740 50 75  | 1MA multiplying correct    |     |
|     | $= 740 \text{ cm} \times 50 \text{ cm}  \checkmark \text{MA}$  | values                     |     |
|     | $= 37\ 000\ \text{cm}^2  \checkmark \text{A}$  | 1A simplification          |     |
|     |  | (5)                        |     |

| Q/V   | Solution/Oplossing   | Explanation/Verduideliking                           | T&L |
|-------|--|--|-----|
|       |  | CA Question 3.1.4                                    | M   |
| 3.1.5 | $37\ 000\ \text{cm}^2 \div 10\ 000 = 3.7\ \text{m}^2 \checkmark \text{C}$    | 1C converting from cm <sup>2</sup> to m <sup>2</sup> | L2  |
|       | Total area to be painted/ <i>Totale area wat geverf moet word</i>            |  |     |
|       | $= 3.7 \text{ m}^2 \times 2 \checkmark \text{M}$                             | 1M area for 2 coats                                  |     |
|       | $= 7.4 \text{ m}^2$  |  |     |
|       | Spread rate/sprydingskoers   |  |     |
|       | $\frac{7.4 \text{ m}^2}{8 \text{ m}^2} \times 1000  \checkmark \text{M}$     | 1M divide by spread rate                             |     |
|       | = 925 millilitres/milliliter ✓CA   | 1CA answer in millilitres                            |     |
|       | OR/OF  | OR/OF  |     |
|       | Spread rate/ $sprydingskoers = 8 \times 10\ 000\ cm^2/\ell$                  |  |     |
|       | $= 80\ 000\ \mathrm{cm^2/\ell}  \checkmark_{\mathbf{M}}$                     |  |     |
|       | 37,000   | 1M multiplying by 8                                  |     |
|       | Amount of paint / aantal verf in $\ell = \frac{37000}{80000}$ $\checkmark$ M | 1M dividing by 80 000                                |     |
|       | = 0,4625   |  |     |
|       | Amount of paint for 1 coat / aantal verf vir 1 deklaag in ml                 |  |     |
|       | $=0,4625 \times 1000$  |  |     |
|       | = 462,5 ✓ C  | 1C converting  |     |
|       | Amount of paint for 2 coats/ aantal verf vir twee deklae                     |  |     |
|       | $= 462.5 \text{ m}\ell \times 2$   |  |     |
|       |  | 104  |     |
|       | = 925 mℓ ✓CA <b>OR/</b> <i>OF</i>  | 1CA simplification <b>OR/OF</b>                      |     |
|       | Total area to be painted/Totale area wat geverf moet word:                   |  |     |
|       | $=37\ 000\ \text{cm}^2 \div (100)^2 = 3.7\ \text{m}^2  \checkmark \text{C}$  | 1C conversion  |     |
|       | Amount of paint for 1 coat/ aantal ver vir 1 deklaag in &                    |  |     |
|       | $=\frac{3.7}{8}\times 1  \checkmark M$                                       | 1M dividing by 8                                     |     |
|       | = 0,4625 <i>l</i>  |  |     |
|       | Total amount of paint/Totale aantal verfl                                    |  |     |
|       | $= 0.4625 \times 1000 \times 2  \checkmark M$                                | 1M area of 2 coats                                   |     |
|       | = 925 mℓ ✓CA   | 1CA simplification                                   |     |
|       | OR/OF  | OR/OF  |     |

| Q/V   | Solution/Oplossing  | Explanation/Verduideliking  | T&L     |
|-------|---|---|---------|
|       | $8 \text{ m}^2 : 1 \ell$<br>$80\ 000\ \text{cm}^2 : \text{x} \checkmark \text{C}$   | 1C conversion   |         |
|       | Amount of paint for 1 coat/ aantal verf vir 1 deklaag   |   |         |
|       | $x = \frac{1000 \times 37000}{80000} \checkmark M$ = 462,5 m $\ell$   | 1M dividing by 80 000   |         |
|       | Amount of paint for 2 coats/ aantal verf vir twee deklae<br>= 462,5 mℓ × 2 ✓M<br>= 925 mℓ ✓CA   | 1M area of 2 coats 1CA simplification                                   |         |
|       | OR/OF  Total area to be painted/ Totale area wat geverf moet word  = $37\ 000 \div 10\ 000\ \checkmark C$ = $3.7\ m^2 \times 2\ \checkmark M$ = $7.4\ m^2$                              | OR/OF  1C conversion 1M area of 2 coats                                 |         |
|       | Spread rate/sprydingskoers in $m\ell/\ell$<br>1 000 ÷ 8 $\checkmark$ M<br>= 125 $m\ell/\ell$  | 1M dividing by 8  |         |
|       | Amount of paint/ aantal verf<br>$125 \times 7.4 \text{ m}^2$<br>= 925 m $\ell$ $\checkmark$ CA  | 1CA simplification (4)  |         |
| 3.1.6 | Height/Hoogte = $\frac{\text{Volume}}{\pi \times (\text{radius})^2}$<br>$\checkmark \text{C}$<br>= $\frac{1\ 000\ \text{cm}^3}{3,142 \times (6,5\ \text{cm})^2}$ $\checkmark \text{SF}$ | 1C conversion from litres to cm <sup>3</sup> 1SF substitution of radius | M<br>L2 |
|       | = 7,53298 cm ✓CA  | 1CA simplification NPR (3)  |         |
| 3.2.1 | a) W or White/ <i>Wit</i> ✓✓RT<br>b) SB or Synthetic Brown leather/ <i>Sintetiese bruin leer</i> ✓✓RT   | 2RT correct code  | P<br>L1 |

| Q/V   | Solution/Oplossing  | Explanation/Verduideliking   | T&L     |
|-------|---|--|---------|
| 3.2.2 | P(not selecting red material) = $\frac{6}{9} \checkmark A$<br>= $\frac{2}{3} \checkmark CA$<br>OR/OF<br>P(not selecting red material) = $1 - \frac{3}{9}$<br>= $\frac{6}{9} \checkmark A$ | 1A numerator 1A denominator 1CA simplification                                     | P<br>L2 |
|       | $= \frac{2}{3} \checkmark CA$   | (3)  |         |
| 3.3.1 | 1 inch = $153.6 \div 60  \checkmark M$  |  | M<br>L1 |
|       | = 2,56 cm ✓A  |  |         |
|       | OR/OF   | 1M dividing by 60  |         |
|       | Alternative solution method:  | 1A simplification  |         |
|       | inch : cm   |  |         |
|       | 60 : 153,6 ✓M   |  |         |
|       | 1 : 2,56 ✓A   |  |         |
|       | 1 inch = $2,56$ cm  |  |         |
|       | /pm   | (2)  | M       |
| 3.3.2 | Perimeter/Omtrek = $2 \times (5 \text{ m} + 153,6 \text{ cm})$<br>$\checkmark \text{C}$<br>= $2 \times (500 \text{ cm} + 153,6 \text{ cm})$   | 1RT correct value – 153,6 cm<br>1C converting from 5 m to cm                       | L2      |
|       | = 1 307,2 cm ✓CA  | 1CA simplification   |         |
|       | OR/OF   | OR/OF  |         |
|       | Perimeter/Omtrek = $5 \text{ m} + 5 \text{ m} + 153,6 \text{ cm} + 153,6 \text{ cm}$<br>= $(500 + 500 + 153,6 + 153,6) \text{ cm}$<br>= $1307,2 \text{ cm} \checkmark \text{CA}$          | 1RT correct value – 153,6 cm<br>1C converting from 5 m to cm<br>1CA simplification |         |
|       |   | (3)<br>[31]  |         |
|       |   |  | 1       |

| QUESTION/VRAAG 4 [17 MARKS/PUNTE] |   |  |          |
|-----------------------------------|---|--|----------|
| Q/V                               | Solution/Oplossing  | Explanation/Verduideliking   | T&I      |
| 4.1.1                             | R46 ✓✓A   | 2A name of route (2)   | MP<br>L1 |
| 4.1.2                             | Number scale <b>OR</b> Numeric scale <b>OR</b> Ratio scale  VV A  Nommerskaal <b>OF</b> verhoudingskaal <b>OF</b> Getalskaal <b>OF</b> Numeriese <b>OF</b> Getalle Skaal <b>OF</b> Syferskaal | 2A identifying the scale (2)   | MP<br>L1 |
| 4.1.3                             | South West <b>OR</b> SW <b>OR</b> West of South West <b>OR</b> WSW  Suidwes <b>OF</b> SW <b>OF</b> Wes van Suidwes <b>OF</b> WSW  | 2A general direction (2)   | MP<br>L1 |
| 4.1.4                             | $A = 210 \text{ km} - (62 \text{ km} + 13 \text{ km} + 82 \text{ km})$ $\checkmark MA$<br>$A = 53 \text{ km}$ $\checkmark CA$   | 1MA subtracting correct values 1CA simplification (2)                        | MP<br>L1 |
| 4.1.5                             | Ladismith $\checkmark \checkmark A$   | 2A correct town (2)  | MP<br>L2 |
| 4.2.1                             | Total length / <i>Totale lengte</i> ✓ MA  = 20 cm + 229 cm + 20 cm + 20 cm + 229 cm + 20 cm  = 538 cm ✓ CA  | 1MA correct values (4×20)<br>1MA adding values (2×229)<br>1CA simplification | MP<br>L2 |
|                                   | OR/OF   | OR/OF  |          |
|                                   | Total length / <i>Totale lengte</i> ✓MA ✓MA 2 (20 cm + 229 cm + 20 cm) 2 × 269 cm = 538 cm ✓CA  | 1MA correct values (4×20)<br>1MA adding values (2×229)<br>1CA simplification |          |
|                                   | OR/OF   | OR / OF  |          |
|                                   | Total length/Totale lengte $ \checkmark MA \qquad \checkmark MA \\ = (20 \text{ cm} \times 4) + (229 \text{ cm} \times 2) \\ = 80 \text{ cm} + 458 \text{ cm} $                               | 1MA correct values (4×20)<br>1MA adding values (2×229)                       |          |
|                                   | = 538 cm ✓ CA   | 1CA simplification (3)   |          |

| Q/V   | Solution/Oplossing   | <b>Explanation/Verduideliking</b>  | T&L      |
|-------|--|--|----------|
| 4.2.2 | $D + 86 + 80 + 86 + D = 260 \checkmark MA$   | 1MA adding all values  | MP<br>L3 |
|       | $2D + 252 = 260$ ✓M $2D = 260 - 252$ $2D = 8$ $D = 8 \div 2$ ✓M  | 1M subtracting from 260 1M dividing by 2   |          |
|       | = 4 cm ✓ CA  | 1CA simplification   |          |
|       | OR/OF Length excluding D   | OR/OF  |          |
|       | = (86 cm × 2) + (20 cm × 4)<br>= 172 cm + 80 cm<br>= 252 cm ✓ MA<br>✓ M<br>2D = 260 cm - 252 cm<br>D = 8 cm ✓ M<br>= 8 cm ÷ 2<br>= 4 cm ✓ CA | 1MA calculating 252 1M subtracting from 260  1M dividing by 2  1CA simplification  (4) |          |
|       |  | [17]   |          |

| Q/V   | Solution/Oplossing  | Explanation/Verduideliking  | T&L     |
|-------|---|---|---------|
| 5.1.1 | TGA – team/span ✓✓RT  | 2RT correct tea (2)   | D<br>L1 |
| 5.1.2 | Range/ $Omvang = 9,625 - 9,100 \checkmark RT$<br>= 0,525 $\checkmark CA$                                      | 1RT reading correct values 1CA concept of range (2)                       | D<br>L1 |
| 5.1.3 | Mean/Gemiddeld $\checkmark$ RT $= \frac{9,100+9,250+9,300+8,650+9,100+9,050+8,7}{10}$ $= 8,975 \checkmark CA$ | 750+9,050+8,300+9,200<br>✓M   | D<br>L2 |
|       |   | 1RT correct values 1M concept of mean 1CA simplification NPR (3)          |         |
| 5.1.4 | $ \checkmark RT $ $ A = 36,425 - (9,300 + 9,100 + 9,225) \checkmark M  = 8,800 \checkmark A $                 | 1RT correct values 1M adding and subtracting 1A simplification (3)        | D<br>L1 |
| 5.1.5 | 36,425 ✓✓A  | 2A correct mode (2)   | D<br>L1 |
| 5.1.6 | $ \frac{\checkmark}{3} \times 100\% $ $ \checkmark A $ $ = 60\% \checkmark CA $                               | 1A numerator 1A denominator 1CA percentage NPR (3)                        | P<br>L2 |
| 5.1.7 | Quartile / Kwartiel 2 $ \sqrt{RT} $ $ = \frac{9,375 + 9,400}{2 \sqrt{M}} $ $ = 9,3875 \sqrt{A} $              | 1RT arranging or correct values  1M dividing by 2  1A simplification  NPR | D<br>L2 |

| Q/V   | Solution/Oplossing   | Explanation/Verduideliking  | T&L     |
|-------|--|---|---------|
| 5.2.1 | Fifty two million nine hunderd and eighty two thousand. $\checkmark \checkmark$ A Twee en vyftig miljoen negehonderd twee en tagtig duisend.                           | 2A amount in words (2)  | D<br>L1 |
| 5.2.2 | Increase in population/ <i>Toename in bevolking</i> (2015-2016)  ✓RT ✓M  56 020 718 – 54 901 943  = 1 118 775  ≈ 1 120 000 ✓R  | 1RT correct values 1M subtracting 1R correct rounding (3)                                   | D<br>L1 |
| 5.2.3 | Annual population growth/Jaarlikse bevolkingstoename(2015) $= \frac{54\ 901\ 943 - 53\ 947\ 998}{53\ 947\ 998} \times 100\%$ $= 1,768\%$ $\approx 1,8\% \checkmark CA$ | 1SF substituting 54 901 943<br>1SF substituting 53 947 998<br>1CA simplification<br>NPR (3) | D<br>L2 |

