

Soek jy 'n fantastiese tutor?

www.teachme2.com/matriek





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 VI

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 |
| 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./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 bladsy.**

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.

| 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 L1 |
| 1.1.2 | ✓MA $A = R110 + R11$ $= R121$ ✓CA | 1MA adding correct values 1CA Simplification (2) | F L1 |
| 1.1.3 | ✓MA $B = R141 - R126$ $= R15$ ✓CA | 1MA subtracting correct values 1CA simplification (2) | F L1 |
| 1.1.4 | Difference/Verskil $R126 - R110$ ✓MA $= R16$ ✓A | 1MA subtract lowest from highest 1A simplification (2) | F L1 |
| 1.1.5 | Increased Delivery fee/Verhoogde afleweringsfooie $= R10,00 \times 6,32\%$ ✓MA $= R0,632$ $= R0,63$ ✓A OR/OF $= R10,00 \times \frac{6,32}{100}$ ✓M $= R0,632$ $= R0,63$ ✓A OR/OF | 1MA calculating percentage 1A simplification OR/OF | F L1 |

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

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

| QUESTION/VRAAG 2 [42 MARKS/PUNTE] | | | |
|-----------------------------------|---|---|---------|
| Q/V | Solution/Oplossing | Explanation/Verduideliking | T&L |
| 2.1.1 | R4 656,71 ✓✓A | 2A correct balance (2) | F L1 |
| 2.1.2 | Full date/Volle datum 1 February/Februarie 2019 ✓✓A 01/02/19 01/02/2019 | 2A full date (2) | F L1 |
| 2.1.3 | R1 215,36 ✓✓A | 2A correct amount (2) | F L1 |
| 2.1.4 | R3 750,00 ✓✓A | 2A correct amount (2) | F L1 |
| 2.1.5 | FNB electronic payments/ENB elektroniese betaling ✓RT ✓RT R101,99 + R698,01 = R800,00 ✓A | 1RT 1 st value correct 1RT 2 nd value correct 1A simplification AO (3) | F L1 |
| 2.1.6 | Price excluding VAT/Prys BTW uitgesluit ✓RT = R4 000,00 × $\frac{100}{115}$ ✓MA = R3 478,26 ✓CA OR/OF Price excluding VAT/Prys BTW uitgesluit ✓RT $\frac{R4000}{1,15}$ ✓MA = R3 478,26 ✓CA OR/OF $\text{VAT amount/BTW bedrag} = R4000,00 \times \frac{15}{115} \text{ ✓MA}$ = R521,74 Price excluding VAT/Prys BTW uitgesluit = R4 000 – R521,74 = R3 478,26 ✓CA | 1RT price of item 1MA calculating VAT 1CA price excluding VAT AO (3) | F L2 |

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

| Q/V | Solution/Oplissing | Explanation/Verduideliking | T&L |
|--------------|---|--|---------|
| 2.3.1 | <p>Selling price of one photo/<i>Verkoopprys van een foto</i> \checkmarkMA $\frac{R500}{25}$ OR $\frac{R1000}{50}$ OR $\frac{R1600}{80}$ OR $\frac{R2500}{125}$ OR $\frac{R3000}{150}$ $= R20 \checkmark$A OR/OF $R4\,000 \div 200 \checkmark$MA $= R20 \checkmark$A</p> | <p>1MA dividing 1A simplification AO</p> <p>(2)</p> | F L1 |
| 2.3.2 | <p>Total income received/<i>Totale inkomste ontvang</i>: \checkmarkCA \checkmarkA Income = $R20,00 \times n$, where n = number of photos Income = $R20,00 \times$ number of photos <i>Inkomste = $R20,00 \times n$, waar n = aantal foto's</i> <i>Inkomste = $R20,00 \times$ aantal foto's</i></p> | <p>CA from Question 2.3.1 1CA $R20,00$ 1A multiply by unknown</p> <p>(2)</p> | F L2 |
| 2.3.3 (a) | <p>$R5,00 \checkmark\checkmark$A</p> | <p>2A variable cost NPU</p> <p>(2)</p> | F L1 |
| 2.3.3 (b) | <p>A : Expenses = $R1\,125 +$ number of photos $\times R5,00$ A : <i>Uitgawes = $R1\,125 +$ aantal foto's $\times R5,00$</i> \checkmarkSF $A = R1\,125 + (80 \times R5,00)$ $A = R1\,125 + R400 \checkmark$MCA $= R1\,525 \checkmark$CA</p> | <p>1SF substituting value 1MCA adding values 1CA simplification AO</p> <p>(3)</p> | F L2 |
| 2.3.4 (a) | <p>$\checkmark\checkmark$A Income and expenses of Ella's photography business <i>Inkomste en uitgawes van Ella se fotografiebesigheid</i></p> | <p>2A correct heading</p> <p>(2)</p> | F L1 |
| 2.3.4 (b) | <p>X $\checkmark\checkmark$A</p> | <p>2A correct graph</p> <p>(2)</p> | F L1 |
| 2.3.4 (c) | <p>75 photographs/<i>foto's</i> $\checkmark\checkmark$A</p> | <p>2A correct number of photographs</p> <p>(2)</p> | F L1 |
| | | [42] | |

QUESTION/VRAAG 3 [31 MARKS/PUNTE]

| Q/V | Solution/Oplossing | Explanation/Verduideliking | T&L |
|------------|---|--|----------------|
| 3.1.1 | <u>Legs of ottomans/Pote van ottomans:</u> 2 cubic/kubieke ottomans \times 4 legs/pote = 8 legs/pote ✓A 1 retangular/reghoekige ottoman \times 6 legs/pote = 6 legs/pote 8 + 6 ✓MA = 14 legs/pote ✓CA | 1A number of legs 1MA adding 6 legs 1CA total number of legs AO (3) | M L1 |
| 3.1.2 | $\text{Radius} = \frac{75 \text{ mm}}{2} \quad \checkmark \text{MA}$ $= 37,5 \text{ mm} / 3,75 \text{ cm} \quad \checkmark \text{A}$ | 1MA concept of radius 1A simplification AO NPR (2) | M L1 |
| 3.1.3 | Total height/Totale hoogte: 50 cm + 12 cm ✓C = 62cm ✓A <p style="text-align: center;">OR/OF</p> Total height/Totale hoogte: = 120 mm + 500 mm = 620 mm ✓A = 62 cm ✓C | 1C converting to cm 1A finding the height AO (2) | M L1 |

| Q/V | Solution/Oplossing | Explanation/Verduideliking | T&L |
|---------|---|--|-----|
| M L2 | <p>Area/Oppervlakte</p> <p>✓A ✓A $(50\text{cm} \times 50\text{cm}) + (120\text{cm} \times 50\text{cm})$ $2\,500\text{ cm}^2 + 6\,000\text{ cm}^2$</p> <p>Total Area/Totale Oppervlakte</p> <p>$(10 \times 2\,500\text{ cm}^2) + (2 \times 6\,000\text{ cm}^2)$ ✓M $25\,000\text{ cm}^2 + 12\,000\text{ cm}^2$ ✓M $37\,000\text{ cm}^2$ ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>8 square sides/<i>vierkantige sye</i> $\times (50 \times 50)$ $= 20\,000\text{ cm}^2$ ✓A</p> <p>2 rectangular sides/<i>reghoekige sye</i> $\times (120 \times 50)$ $= 12\,000\text{ cm}^2$ ✓A</p> <p>2 square sides / <i>vierkantige sye</i> $\times (50 \times 50)$ $= 5\,000\text{ cm}^2$ ✓A</p> <p>Total area to be painted/<i>Totale area wat geverf moet word:</i> $= 20\,000\text{ cm}^2 + 12\,000\text{ cm}^2 + 5\,000\text{ cm}^2$ ✓M $= 37\,000\text{ cm}^2$ ✓MA</p> <p style="text-align: center;">OR/OF</p> <p>Total perimeter/<i>Totale Omtrek</i></p> <p>✓A ✓M $= (50+50+50+50+50+50+50+50+120+50+50+120)\text{ cm}$ $= 740\text{ cm}$ ✓A</p> <p>Total area to be painted/<i>Totale area wat geverf moet word:</i> $= 740\text{ cm} \times 50\text{ cm}$ ✓MA $= 37\,000\text{ cm}^2$ ✓A</p> | <p>1A area 1A area</p> <p>1M multiplying correct values 1M adding the two areas 1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>1A simplification</p> <p>1A simplification</p> <p>1A simplification</p> <p>1M adding all values 1MA finding total area</p> <p style="text-align: center;">OR/OF</p> <p>1A all correct values 1M adding correct values 1A simplification</p> <p>1MA multiplying correct values 1A simplification</p> <p style="text-align: right;">(5)</p> | |

| Q/V | Solution/Oplissing | Explanation/Verduideliking | T&L |
|-------|---|---|---------|
| 3.1.5 | $37\,000\text{ cm}^2 \div 10\,000 = 3,7\text{ m}^2 \checkmark\text{C}$ Total area to be painted/ <i>Totale area wat geverf moet word</i> $= 3,7\text{ m}^2 \times 2 \checkmark\text{M}$ $= 7,4\text{ m}^2$ Spread rate/ <i>sprydingskoers</i> $\frac{7,4\text{ m}^2}{8\text{ m}^2} \times 1\,000 \checkmark\text{M}$ $= 925\text{ millilitres/milliliter} \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p> Spread rate/ <i>sprydingskoers</i> $= 8 \times 10\,000\text{ cm}^2/\ell$ $= 80\,000\text{ cm}^2/\ell \checkmark\text{M}$ Amount of paint / <i>aantal verf in ℓ</i> $= \frac{37\,000}{80\,000} \checkmark\text{M}$ $= 0,4625$ Amount of paint for 1 coat / <i>aantal verf vir 1 deklaag in mℓ</i> $= 0,4625 \times 1\,000$ $= 462,5 \checkmark\text{C}$ Amount of paint for 2 coats/ <i>aantal verf vir twee deklae</i> $= 462,5\text{ mℓ} \times 2$ $= 925\text{ mℓ} \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p> Total area to be painted/ <i>Totale area wat geverf moet word:</i> $= 37\,000\text{ cm}^2 \div (100)^2 = 3,7\text{ m}^2 \checkmark\text{C}$ Amount of paint for 1 coat/ <i>aantal ver vir 1 deklaag in ℓ</i> $= \frac{3,7}{8} \times 1 \checkmark\text{M}$ $= 0,4625\text{ ℓ}$ Total amount of paint/ <i>Totale aantal verfl</i> $= 0,4625 \times 1000 \times 2 \checkmark\text{M}$ $= 925\text{ mℓ} \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p> | CA Question 3.1.4 1C converting from cm^2 to m^2 1M area for 2 coats 1M divide by spread rate 1CA answer in millilitres <p style="text-align: center;">OR/OF</p> 1M multiplying by 8 1M dividing by 80 000 1C converting 1CA simplification <p style="text-align: center;">OR/OF</p> 1C conversion 1M dividing by 8 1M area of 2 coats 1CA simplification <p style="text-align: center;">OR/OF</p> | M L2 |

| Q/V | Solution/Opslossing | Explanation/Verduideliking | T&L |
|------------|---|---|----------------|
| | <p>8 m² : 1 ℓ 80 000 cm² : x ✓C</p> <p>Amount of paint for 1 coat/ <i>aantal verf vir 1 deklaag</i></p> $x = \frac{1000 \times 37\,000}{80\,000} \quad \checkmark M$ <p>= 462,5 ml</p> <p>Amount of paint for 2 coats/ <i>aantal verf vir twee deklae</i> = 462,5 ml × 2 ✓M = 925 ml ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>Total area to be painted/ <i>Totale area wat geverf moet word</i> = 37 000 ÷ 10 000 ✓C = 3,7 m² × 2 ✓M = 7,4 m²</p> <p>Spread rate/ <i>sprydingskoers</i> in ml/ ℓ 1 000 ÷ 8 ✓M = 125 ml/ ℓ</p> <p>Amount of paint/ <i>aantal verf</i> 125 × 7,4 m² = 925 ml ✓CA</p> | <p>1C conversion</p> <p>1M dividing by 80 000</p> <p>1M area of 2 coats 1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>1C conversion 1M area of 2 coats</p> <p>1M dividing by 8</p> <p>1CA simplification</p> <p>(4)</p> | |
| 3.1.6 | <p>Height/Hoogte = $\frac{\textbf{Volume}}{\pi \times (\textbf{radius})^2}$ ✓C</p> $= \frac{1\,000 \text{ cm}^3}{3,142 \times (6,5 \text{ cm})^2} \quad \checkmark SF$ <p>= 7,53298.... cm ✓CA</p> | <p>1C conversion from litres to cm³</p> <p>1SF substitution of radius</p> <p>1CA simplification NPR</p> <p>(3)</p> | M L2 |
| 3.2.1 | <p>a) W or White/Wit ✓✓RT</p> <p>b) SB or Synthetic Brown leather/<i>Sintetiese bruin leer</i> ✓✓RT</p> | <p>2RT correct code</p> <p>2RT correct code</p> <p>(4)</p> | P L1 |

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

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

| Q/V | Solution/Oplossing | Explanation/Verduideliking | T&L |
|-------|---|---|----------|
| 4.2.2 | $D + 86 + 80 + 86 + D = 260$ ✓MA $2D + 252 = 260$ $\checkmark M$ $2D = 260 - 252$ $2D = 8$ $D = 8 \div 2$ ✓M $= 4 \text{ cm}$ ✓CA <p style="text-align: center;">OR/OF</p> <p>Length excluding D</p> $= (86 \text{ cm} \times 2) + (20 \text{ cm} \times 4)$ $= 172 \text{ cm} + 80 \text{ cm}$ $= 252 \text{ cm}$ ✓MA $\checkmark M$ $2D = 260 \text{ cm} - 252 \text{ cm}$ $D = 8 \text{ cm}$ ✓M $= 8 \text{ cm} \div 2$ $= 4 \text{ cm}$ ✓CA | <p>1MA adding all values</p> <p>1M subtracting from 260</p> <p>1M dividing by 2</p> <p>1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>1MA calculating 252</p> <p>1M subtracting from 260</p> <p>1M dividing by 2</p> <p>1CA simplification</p> <p style="text-align: right;">(4)</p> | MP L3 |
| | | [17] | |

| QUESTION/VRAAG 5 [30 MARKS/PUNTE] | | | |
|--|--|---|----------------|
| Q/V | Solution/Oplissing | Explanation/Verduideliking | T&L |
| 5.1.1 | TGA – team/span ✓✓RT | 2RT correct tea (2) | D L1 |
| 5.1.2 | Range/Omvang = 9,625 – 9,100 ✓RT = 0,525 ✓CA | 1RT reading correct values 1CA concept of range (2) | D L1 |
| 5.1.3 | Mean/Gemiddeld ✓RT = $\frac{9,100 + 9,250 + 9,300 + 8,650 + 9,100 + 9,050 + 8,750 + 9,050 + 8,300 + 9,200}{10}$ ✓M = 8,975 ✓CA | 1RT correct values 1M concept of mean 1CA simplification NPR (3) | D L2 |
| 5.1.4 | ✓RT $A = 36,425 - (9,300 + 9,100 + 9,225)$ ✓M = 8,800 ✓A | 1RT correct values 1M adding and subtracting 1A simplification (3) | D L1 |
| 5.1.5 | 36,425 ✓✓A | 2A correct mode (2) | D L1 |
| 5.1.6 | ✓A $\frac{3}{5} \times 100\%$ ✓A = 60% ✓CA | 1A numerator 1A denominator 1CA percentage NPR (3) | P L2 |
| 5.1.7 | Quartile / Kwartiel 2 ✓RT = $\frac{9,375 + 9,400}{2}$ ✓M = 9,3875 ✓A | 1RT arranging or correct values 1M dividing by 2 1A simplification NPR (3) | D L2 |

| Q/V | Solution/Oplossing | Explanation/Verduideliking | T&L |
|-------|--|---|---------|
| 5.2.1 | Fifty two million nine hundred and eighty two thousand. ✓✓A <i>Twee en vyftig miljoen negehonderd twee en tagtig duisend.</i> | 2A amount in words (2) | D 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 L1 |
| 5.2.3 | Annual population growth/ <i>Jaarlikse bevolkingstoename</i> (2015) $= \frac{54\,901\,943 - 53\,947\,998}{53\,947\,998} \times 100\%$ ✓SF = 1,768% ≈ 1,8% ✓CA | 1SF substituting 54 901 943 1SF substituting 53 947 998 1CA simplification NPR (3) | D L2 |

| Q/V | Solution/Oplissing | Explanation/Verduideliking | T&L | | | | | | | | | | | | | | | | | | | | | |
|-------|---|-----------------------------------|------|-------------------------------|-----------------------------------|------|------------|-----|------|------------|-----|------|------------|-----|------|------------|-----|------|------------|-----|------|------------|-----|---------|
| 5.2.4 | <div><p>Estimated total population and annual growth from 2013-2017</p><table><thead><tr><th>Year</th><th>Population (Number of people)</th><th>Population growth (in percentage)</th></tr></thead><tbody><tr><td>2013</td><td>52 982 000</td><td>2.2</td></tr><tr><td>2014</td><td>53 947 998</td><td>1.9</td></tr><tr><td>2015</td><td>54 901 943</td><td>1.8</td></tr><tr><td>2016</td><td>56 020 718</td><td>2.1</td></tr><tr><td>2017</td><td>56 521 948</td><td>0.9</td></tr><tr><td>2018</td><td>57 725 606</td><td>2.1</td></tr></tbody></table></div> | | Year | Population (Number of people) | Population growth (in percentage) | 2013 | 52 982 000 | 2.2 | 2014 | 53 947 998 | 1.9 | 2015 | 54 901 943 | 1.8 | 2016 | 56 020 718 | 2.1 | 2017 | 56 521 948 | 0.9 | 2018 | 57 725 606 | 2.1 | D L2 |
| Year | Population (Number of people) | Population growth (in percentage) | | | | | | | | | | | | | | | | | | | | | | |
| 2013 | 52 982 000 | 2.2 | | | | | | | | | | | | | | | | | | | | | | |
| 2014 | 53 947 998 | 1.9 | | | | | | | | | | | | | | | | | | | | | | |
| 2015 | 54 901 943 | 1.8 | | | | | | | | | | | | | | | | | | | | | | |
| 2016 | 56 020 718 | 2.1 | | | | | | | | | | | | | | | | | | | | | | |
| 2017 | 56 521 948 | 0.9 | | | | | | | | | | | | | | | | | | | | | | |
| 2018 | 57 725 606 | 2.1 | | | | | | | | | | | | | | | | | | | | | | |
| | <div><p>1A – correctly plotted number of people 1CA – drawing of graph 1A – correctly plotted population growth 1CA – drawing of graph</p></div> | | (4) | | | | | | | | | | | | | | | | | | | | | |
| | [30] | | | | | | | | | | | | | | | | | | | | | | | |
| | TOTAL/TOTAAL: 150 | | | | | | | | | | | | | | | | | | | | | | | |