

Soek jy 'n fantastiese tutor?

www.teachme2.com/matriek





basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATION/ NATIONAL SENIOR CERTIFICATE EXAMINATION

MATHEMATICAL LITERACY P1/ *WISKUNDIGE GELETTERDHEID V1*

2019

MARKING GUIDELINE/*NASIENRIGLYNE*

MARKS/PUNTE: 150

Symbol/ <i>Kode</i>	Explanation/ <i>Verduideliking</i>
M	Method/ <i>Metode</i>
MA	Method with accuracy/ <i>Metode met akkuraatheid</i>
CA	Consistent accuracy/ <i>Volgehoue akkuraatheid</i>
A	Accuracy/ <i>Akkuraatheid</i>
C	Conversion/ <i>Herleiding</i>
S	Simplification/ <i>Vereenvoudiging</i>
RT	Reading from a table/graph/document/diagram/ <i>Lees vanaf tabel/grafiek/document/diagram</i>
SF	Correct substitution in a formula/ <i>Korrekte vervanging in 'n formule</i>
O	Opinion/Explanation/ <i>Opinie/Verduideliking</i>
P	Penalty, e.g. for no units, incorrect rounding off, etc./ <i>Penalisasie, bv. vir geen eenhede, verkeerde afronding, ens.</i>
R	Rounding off/ <i>Afronding</i>
NPR	No penalty for rounding/ <i>Geen penalisasie vir afronding nie</i>
NPU	No penalty for units/ <i>Geen penalisasie vir eenhede nie</i>
AO	Answer only/ <i>Slegs antwoord</i>
MCA	Method with constant accuracy/ <i>Metode met volgehoue akkuraatheid</i>

**These marking guidelines consist of 19 pages.
*Hierdie nasienriglyne bestaan uit 19 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.
- 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, merk slegs die EERSTE poging.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.

QUESTION/VRAAG 1 [32 MARKS/PUNTE] ANSWER ONLY FULL MARKS			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	Susan Visser / Susan / Visser ✓✓RT	2RT correct name Accept: Woolworths Financial Services (2)	F L1
1.1.2	R548,37 ✓✓RT	2RT correct amount (2)	F L1
1.1.3	12 / twelve/twaalf ✓✓A	2A correct number of months (2)	F L1
1.1.4	Debit order is a way for a third party, that you have given permission, to collect money from your bank account. It's typically used to collect monthly subscriptions, insurance premiums or loan repayments/ <i>Debietorder is die manier waarop 'n derde party, wat jy toestemming gee om geld vanaf jou bankrekening te trek. Dit is 'n tipiese manier wat gebruik word om maandelikse versekerings premies of lening betalings te betaal.</i> ✓A ✓A OR/OF An instruction to the bank, authorising payment to the other person on a regular basis/'n <i>Instruksie aan die bank, om die betaling aan 'n ander</i> ✓A <i>persoon op 'n gereelde basis te magtig.</i> ✓A OR/OF	1A money taken out (deducted) of bank account 1A regular basis/monthly	F L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.4	<p>It is an arrangement giving permission to a third party to withdraw money from a bank account on a regular basis/<i>Dit is 'n reeling, wat toestemming aan 'n derde party gee, om geld op 'n gereelde basis uit 'n bankrekening te onttrek.</i> ✓A ✓A</p> <p>OR/OF</p> <p>A term used for bank references in order for them to deduct money owed to certain bank accounts on a regular basis/<i>'n Term wat gebruik word vir bank verwysings sodat geld op 'n gereelde basis van sekere bankrekenings afgetrek kan word.</i> ✓A ✓A</p> <p>OR/OF</p> <p>When an individual has to pay a certain person on a regular basis, they set a date and how much should be taken from their account/<i>Wanneer 'n individu gereeld 'n sekere persoon moet betaal, stel hulle 'n datum vas en hoeveel uit hul rekening geneem moet word.</i> ✓A ✓A</p> <p>OR/OF</p> <p>Pre-arranged monthly payment of a specific amount from your bank (on behalf of borrower) account to settle debt/<i>Voorafgestelde maandelikse betaling van 'n spesifieke bedrag van u bank (namens die lener) rekening om skuld te vereffen.</i> ✓A ✓A</p>	<p>1A money taken out of bank account/salary 1A regular basis/monthly</p> <p>(2)</p>	
1.1.5	26 days/dae ✓✓A	<p>2A correct number of days</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Accept: 25 days</div> <p>(2)</p>	F L1

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.1.6	$A = R6\,859,99 + R144,04 + (-R221,89)$ $= R6\,782,14 \quad \checkmark A$ <p style="text-align: center;">OR/OF</p> $A = (R6\,859,99 + R144,04) - R221,89$ $= R7\,004,03 - R221,89$ $= R6\,782,14 \quad \checkmark A$ <p style="text-align: center;">OR/OF</p> $R38 + R2\,559,79 + A + R1\,071,70 = R10\,451,63$ $A = R10\,451,63 - R3\,669,49 \quad \checkmark MA$ $= R6\,782,14 \quad \checkmark A$	1MA adding and subtracting the values 1A simplification <p style="text-align: center;">OR/OF</p> 1MA adding and subtracting the values 1A simplification <p style="text-align: center;">OR/OF</p> 1MA adding and subtracting the values 1A simplification NPU (2)	F L1
1.2.1	26°C $\checkmark\checkmark RT$	2RT maximum temperature NPU (2)	M L1
1.2.2	8 June/Junie 2017 $\checkmark\checkmark RT$ <p style="text-align: center;">OR/OF</p> 08.06.2017 $\checkmark\checkmark RT$ <p style="text-align: center;">OR/OF</p> 08 /06 /2017 $\checkmark\checkmark RT$ <p style="text-align: center;">OR/OF</p> 8 June/Junie $\checkmark\checkmark RT$	2RT correct date (2)	M L1
1.2.3	26°C ; 22°C ; 21°C ; 20°C ; 19°C ; 16°C ; 15°C ; 15°C ; 14°C $\checkmark A \quad \checkmark A$	1A correct values 1A correct order NPU (2)	D L1

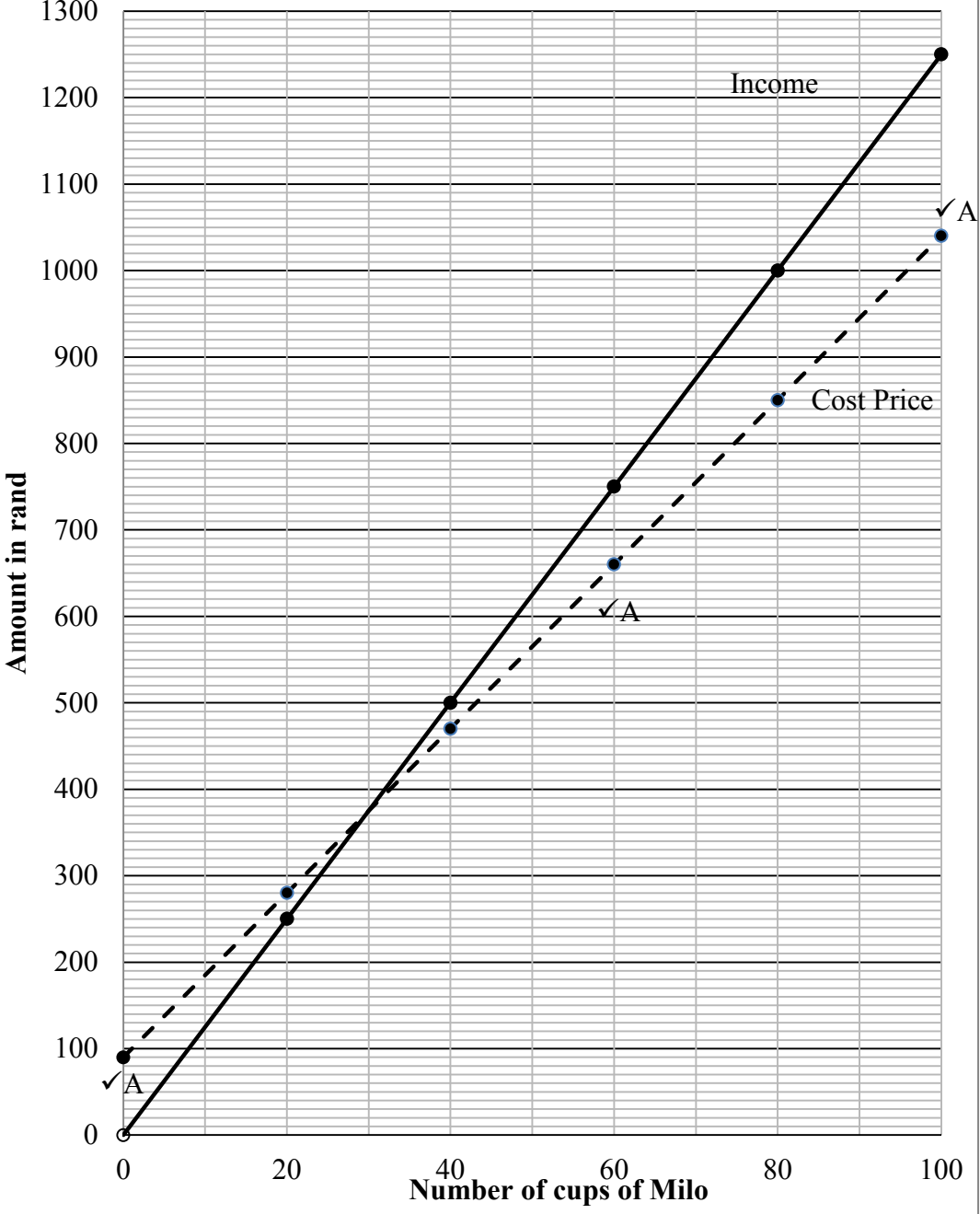
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.2.4	6 June/Junie 2017 ✓✓RT OR/OF 06 / 06 / 2017 ✓✓RT OR/OF 6 June/Junie ✓✓RT OR/OF 6 th /6de ✓✓RT	2RT correct date (2)	M L1
1.2.5	✓RT $15^{\circ}\text{C} - 3^{\circ}\text{C}$ $= 12^{\circ}\text{C}$ ✓A	1RT both correct values 1A simplification NPU (2)	D L1
1.3.1	Age group/Ouderdomsgroep: 20 – 29 ✓✓RT	2RT correct age group (2)	D L1
1.3.2	Number of male voters under 40/ <i>Aantal manlike kiesers onder 40</i> $= 109\,224 + 2\,443\,115 + 3\,095\,538$ ✓M $= 5\,647\,877$ ✓CA OR/OF Number of male voters under 40/ <i>Aantal manlike kiesers onder 40</i> $= 11\,797\,561 - 2\,553\,636 - 1\,824\,042 -$ $1\,116\,525 - 479\,711 - 175\,770$ ✓M $= 5\,647\,877$ ✓CA	1M adding correct values 1CA answer 1M subtracting correct values 1CA answer (2)	D L1
1.3.3	Two million eight hundred and fifty eight thousand nine hundred and ninety six/ <i>Twee miljoen agt honderd agt en vyftig duisend nege honderd ses en negentig.</i> ✓✓A	2A correct number in words (2)	D L1
1.3.4	Discrete/Diskreet ✓✓A	2A discrete (2)	D L1
1.3.5	✓MA $14\,442\,779 - 11\,797\,561$ $= 2\,645\,218$ ✓A	1MA subtracting correct values 1A correct answer (2)	D L1
		[32]	

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.1.4 (b)	B – amount of milk used/aantal melk gebruik: $\frac{R1,20}{R11,99} \quad \checkmark \text{MA}$ $= 0,1 \ell \quad \checkmark \text{A}$	1MA dividing by R11,99 1A simplification AO NPU (2)	F L1
2.1.4 (c)	C – cost of 25 foam cups/koste van 25 polistireen koppies: $R1,78 \times 25 \quad \checkmark \text{MA}$ $= R44,50 \quad \checkmark \text{A}$	1MA multiply by 25 1A simplification AO (2)	F L1
2.1.4 (d)	D – cost of one cup of milo/koste van een koppie milo: $R3,92 + R1,20 + R0,13 + R1,78 + R0,26$ $= R7,29$	CA from Question 2.1.4(a) 1M adding 1A 5 correct values (2)	F L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.1.5	<p>Profit/<i>Wins</i> = R7,29 × $\frac{25}{100}$ ✓M</p> <p>Selling price/<i>Verkoopprijs</i> = R1,8225 + R7,29 ✓M</p> <p>Selling price/<i>Verkoopprijs</i> = R9,1125 ✓CA</p> <p>= R9,11 OR/OF R9,10 ✓R</p> <p style="text-align: center;">OR/OF</p> <p style="text-align: right;">✓M</p> <p>Selling price/<i>Verkoopprijs</i> = R7,29 × $\frac{125}{100}$ ✓A</p> <p>= R9,1125 ✓CA</p> <p>= R9,11 OR/OF R9,10 ✓R</p> <p style="text-align: center;">OR/OF</p> <p>Profit margin/<i>Winsgrens</i> =</p> $\frac{\text{profit/wins}}{\text{selling price / verkoopsprys}} \times 100\%$ $\frac{x - 7,29}{x} \times \frac{100\%}{1} = 25\% \quad \checkmark M$ $\frac{100\%x - 7,29}{x} = \frac{25\%}{1} \quad \checkmark M$ $100\%x - 7,29 = 25\%x$ $100\% - 25\%x = 7,29$ $75\%x = 7,29 \quad \checkmark M$ <p>=R9,72 ✓CA</p> <p style="text-align: center;">OR/OF</p> $25\% = \frac{\text{SP/VP} - \text{CP/KP}}{\text{cost price/kosprys}} \times 100\%$ $25\% = \frac{\text{SP/VP} - 7,29}{7,29} \times 100\%$ <p style="text-align: right;">✓M ✓M</p> <p>Selling Price/<i>Verkoopprijs</i> = (0,25 × 7,29) + 7,29</p> <p>= R9,1125 ✓CA</p> <p>= R9,11 ✓R</p>	<p>CA from question 2.1.4(d)</p> <p>1M 25% of R7,29 only</p> <p>1M adding</p> <p>1CA simplification</p> <p>1R rounding</p> <p>OR/OF</p> <p>1A 125% of R7,29 only</p> <p>1M multiply</p> <p>1CA simplification</p> <p>1R rounding</p> <p style="text-align: center;">OR/OF</p> <p>1M creating formula</p> <p>1M changing the subject of the formula</p> <p>1M dividing by 75%</p> <p>1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>1M 25% of R7,29 only</p> <p>1M adding</p> <p>1CA simplification</p> <p>1R rounding</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">Accept R9,15 and R9,20</div>	F L2

(4)

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.2.1 (a)	$P = 40 \times R12,50 \checkmark MA$ $= R500,00 \checkmark CA$ <p style="text-align: center;">OR/OF</p> $80 \text{ cups/koppies} = R1\ 000$ $\frac{1}{2} \text{ of } 80 \text{ cups/koppies is } 40 \text{ cups/koppies}$ $\therefore \frac{1}{2} \text{ of } R1\ 000 \text{ is } R500.$ $\therefore P = R500 \checkmark CA$ <p style="text-align: center;">OR/OF</p> $P = R375 + R125 \checkmark MA$ $= R500 \checkmark CA$	$1MA \text{ multiply by } R12,50$ $1CA \text{ selling price}$ <p style="text-align: center;">OR/OF</p> $1MA \text{ trial and error method}$ $1CA \text{ selling price}$ $1MA \text{ adding}$ $1CA \text{ selling price}$ AO (2)	F L1
2.2.1 (b)	$\text{Income in rand/Inkomste in rand} = R12,50 \times \text{number of cups of milo/aantal koppies milo} / n \checkmark \checkmark A$ <p style="text-align: center;">OR/OF</p> $\text{Income in rand/Inkomste in rand} = R12,50 \times x \checkmark A$ $x = \text{number of cups of milo/aantal koppies milo} \checkmark A$	$2A \text{ formula}$ <p style="text-align: center;">OR/OF</p> $1A \text{ Income in rand} = R12,50 \times x \text{ (in equation)}$ $1A \text{ explaining variable}$ (2)	F L2
2.2.1 (c)	$\text{Number of cups of milo/aantal koppies milo} / n \checkmark \checkmark RT$	$2RT \text{ independent variable}$ (2)	F L1
2.2.2	$R612,50 = R90,00 + (R9,50 \times n)$ $R612,50 - R90,00 = R9,50 \times n \checkmark M$ $n = \frac{522,50}{9,50} \checkmark S$ $Q = 55 \checkmark CA$ <p style="text-align: center;">OR/OF</p> $\checkmark M$ $R90 + R9,50 \times 55 = R612,50 \checkmark S$ $Q = 55 \checkmark CA$	$1M \text{ changing subject of formula}$ $1S \text{ simplification}$ $1CA \text{ simplification}$ <p style="text-align: center;">OR/OF</p> $1M \text{ trial and error}$ $1S \text{ simplification}$ $1CA \text{ simplification}$ AO (3)	F L2

Q/V	Solution/Oplissing	T&L
2.2.3	<p data-bbox="316 320 1278 387" style="text-align: center;">INCOME AND COST GRAPHS FOR MAKING AND SELLING OF CUPS OF MILO</p>  <p data-bbox="268 1839 815 1951">1A start of graph – cost price (0;90) 1A end of graph – cost price (100;1 040) 1A joining the points in a straight line graph</p>	<p data-bbox="1369 271 1449 338">F L2</p> <p data-bbox="1305 1951 1342 1980" style="text-align: right;">(3)</p>

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.2.4 (a)	<p>The cost price for the number of cups of Milo sold and the selling price of that number is the same (equal). No profit or loss/<i>Die kosprys vir die getal koppies Milo wat verkoop is en die verkoopprijs vir daardie getal is dieselfde (gelyk). Geen wins of verlies.</i> ✓✓A</p> <p>OR/OF</p> <p>Cost price = Selling price/ <i>Kosprys = Verkoopprijs</i> ✓✓A</p> <p>OR/OF</p> <p>Income = Expenses/<i>Inkomste = Uitgawes</i> ✓✓A</p> <p>OR/OF</p> <p>The profit and loss are equal to 0/<i>Die wins en verlies is gelyk aan 0.</i> ✓✓A</p>	<p>2A break-even</p> <p>(2)</p>	F L1
2.2.4 (b)	30 cups/ <i>koppies</i> ✓✓RT	<p>CA from Question 2.2.3 (graph)</p> <p>2RT number of cups</p> <p>(2)</p>	F L2
2.3.1	<p>✓M $1\,200 \div 0,10976$ ✓RT</p> <p>= 10 932,94 Yen ✓A</p>	<p>1RT correct values 1M dividing by exchange rate</p> <p>1A simplification AO NPR</p> <p>(3)</p>	F L2
2.3.2	<p>Yen is Weaker ✓✓A</p> <p>OR/OF</p> <p>Rand is stronger ✓✓A</p>	<p>CA from Question 2.3.1</p> <p>2A for stating weaker</p> <p>OR/OF</p> <p>2A for stating stronger</p> <p>(2)</p>	F L1
		[40]	

QUESTION/VRAAG 3 [26 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.1.1(a)	<p>Area of a face without a circular hole/ <i>Oppervlakte van 'n aansig sonder 'n sirkelvormige gat</i> = side \times side = $45\text{cm} \times 45\text{cm}$ ✓SF = $2\,025\text{ cm}^2$ ✓A ✓A</p>	<p>1SF substituting correct value 1A correct area 1A correct unit (3)</p>	M L2
3.1.1(b)	<p>Area of hole/<i>Oppervlakte van gat</i> = $\pi \times \text{radius}^2$ = $3,142 \times 9,5\text{ cm} \times 9,5\text{ cm}$ ✓SF = $283,5655\text{cm}^2$ ✓A</p> <p>Area of sides $= 2\,025\text{ cm}^2 \times 6 - 2(283,5655\text{ cm}^2)$ ✓MA ✓MA ✓M = $11\,582,869\text{ cm}^2$</p> <p style="text-align: center;">OR/OF</p> <p>Area of hole/<i>Oppervlakte van die gat</i> = $\pi \times \text{radius}^2$ = $3,142 \times (9,5\text{cm})^2$ ✓SF = $283,5655\text{cm}^2$ ✓A</p> <p>Area of faces without holes + area with faces with holes/<i>Oppervlakte van die aansigte met gate + oppervlakte van aansigte sonder gate</i> $= (4 \times 2\,025\text{cm}^2) + [2 \times (2\,025 - 283,5655)]$ ✓CA $= 8\,100\text{cm}^2 + 2 \times 1\,741,4345$ ✓CA $= 8\,100\text{cm}^2 + 3\,482,869\text{cm}^2$ ✓M = $11\,582,869\text{cm}^2$</p> <p style="text-align: center;">OR/OF</p> <p>Area of hole/<i>Oppervlakte van die gat</i> = $\pi \times \text{radius}^2$ = $3,142 \times (9,5\text{cm})^2$ ✓SF = $283,5655\text{cm}^2$ ✓A</p> <p>$2\,025\text{ cm}^2 \times 6 = 12\,150\text{ cm}^2$ ✓MA $3,142 \times 9,5\text{ cm}^2$ $283,5655 \times 2$ ✓MA = $567,131\text{ cm}^2$ $12\,150\text{ cm}^2 - 567,131\text{ cm}^2$ ✓M = $11\,582,869\text{ cm}^2$</p>	<p>CA from Question 3.1.1 (a)</p> <p>1SF substituting correct value 1A correct area</p> <p>1MA multiply by 6 1MA multiply by 2 1M subtracting the values</p> <p style="text-align: center;">OR/OF</p> <p>1SF substituting correct value 1A correct area</p> <p>1CA total area without holes 1CA total area with holes 1M adding both values</p> <p style="text-align: center;">OR/OF</p> <p>1SF substituting correct value 1A correct area</p> <p>1MA multiply by 6 1MA multiply by 2 1M subtracting the values (5)</p>	M L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.1 (c)	<p>Total surface area of 12 chairs: <i>Totale buite-oppervlakte van 12 stoele:</i></p> $= 11\,582,869\text{ cm}^2 \times 12 \checkmark M$ $= 138\,994,428\text{ cm}^2$ <p>Amount of paint/<i>Hoeveelheid verf:</i></p> $= 138\,994,428\text{ ml} \div 15 \times 1,8 \checkmark MA$ $= (16\,679,33136 \div 1\,000)\text{ l} \checkmark C$ $\approx 17\text{ l} \checkmark R$ <p style="text-align: center;">OR/OF</p> <p>Amount of paint per chair/<i>Aantal verf per stoel</i></p> $= 11\,582,869\text{ cm}^2 \div 15 \times 1,8 \checkmark MA$ $= 1\,389,94428\text{ ml} \div 1\,000 \checkmark C$ $= 1,38994428\text{ l}$ <p>Total surface area of 12 chairs/ <i>Totale buite-oppervlakte van 12 stoele:</i></p> $= 1,38994428\text{ l} \times 12 \checkmark M$ $= 16,67933136\text{ l}$ $\approx 17\text{ l} \checkmark R$	<p>1M multiplying by 12</p> <p>1MA $\div 15 \times 1,8$ 1C converting ml to l 1R rounding up</p> <p style="text-align: center;">OR/OF</p> <p>1MA $\div 15 \times 1,8$ 1C converting ml to l</p> <p>1M multiply by 12 1R rounding up</p> <p style="text-align: right;">(4)</p>	M L3
3.1.2 (a)	<p>Diameter/<i>Middel lyn</i> $= 2 \times r$ $= 2 \times 7\text{ cm} \checkmark MA$ $= 14\text{ cm} \checkmark A$</p> <p style="text-align: center;">OR/OF</p> <p>Diameter/<i>Middel lyn</i> $= 7\text{ cm} + 7\text{ cm} \checkmark MA$ $= 14\text{ cm} \checkmark A$</p>	<p>1MA multiplying by 2 1A simplifying</p> <p style="text-align: center;">OR/OF</p> <p>1MA adding correct values 1A simplifying AO NPU</p> <p style="text-align: right;">(2)</p>	M L1
3.1.2 (b)	<p>Volume of a cylinder $= \pi \times (\text{radius})^2 \times \text{height}$ <i>Volume silinder</i> $= \pi \times (\text{radius})^2 \times \text{hoogte}$</p> $5\,000\text{ cm}^3 = 3,142 \times (7)^2 \times \text{height} \checkmark SF$ $\text{Height} = \frac{5\,000}{3,142 \times (7)^2} \checkmark M$ $= 32,476\dots\text{ cm}$ $\approx 32,48\text{ cm} \checkmark CA$	<p>1SF substitution – $5\,000\text{ cm}^3$ and 7</p> <p>1M changing the subject of the Formula 1CA correct height NPR</p> <p style="text-align: right;">(3)</p>	M L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.2.1	High Risk/ <i>Hoë risiko</i> ✓✓RT	2RT correct answer (2)	M L1
3.2.2	Waist-to-hip ratio = $\frac{\text{waist measurement}}{\text{hip measurement}}$ <i>Middelleyf-tot-Heupverhouding</i> $= \frac{\text{Middelleyfmaat}}{\text{Heupmaat}}$ $= \frac{105}{92}$ ✓SF $= 1,141\dots$ ✓CA	1SF substituting correct values 1CA answer NPR (2)	M L2
3.2.3 (a)	40 to 49 years of age/ <i>jaar oud</i> ✓✓RT OR/OF 50 to 59 years of age/ <i>jaar oud</i> ✓✓RT OR/OF 60 to 69 years of age/ <i>jaar oud</i> ✓✓RT	2RT correct age (2)	M L1
3.2.3 (b)	Waist-to-hip ratio = $\frac{\text{waist measurement}}{\text{hip measurement}}$ <i>Middelleyf-tot-Heupverhouding</i> = $\frac{\text{Middelleyfmaat}}{\text{Heupmaat}}$ $0,7826 = \frac{72}{\text{hip measurement}}$ ✓SF Hip measurement = $\frac{72}{0,7826}$ ✓M $= 91,5797507$ $\approx 92 \text{ cm}$ ✓R	1SF substituting correct values in correct formula 1M changing the subject of the formula 1R rounding AO (3)	M L2
		[26]	

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.2.3	Actual distance/ <i>Werklike afstand</i> $= 60 \text{ mm} \times 10\,000\,000 \checkmark \text{M}$ $= 600\,000\,000 \text{ mm} \div 1\,000\,000 \checkmark \text{M}$ $= 600 \text{ km} \checkmark \text{CA}$	1M concept of scale 1M conversion 1CA distance AO (3)	Map L2
4.2.4	$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$ $\text{Spoed} = \frac{\text{Afstand}}{\text{Tyd}}$ $= \frac{597}{7 \frac{26}{60}} \checkmark \text{A}$ $= 80,314 \text{ km/h} \checkmark \text{A}$	1A substitution - 597 1A time calculation 1A correct average speed NPR (3)	Map L2
		[21]	

QUESTION/VRAAG 5 [31 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.1.1	Survey / Questionnaire / Interviews <i>Opname / Vraelys / Onderhoude</i> ✓✓A	2A correct instrument (2)	D L1
5.1.2	KwaZulu-Natal/KZN ✓✓RT	2RT correct province (2)	D L1
5.1.3	Mean number of voting stations/ <i>Gemiddelde aantal stemlokale</i> $= \frac{22\,612}{9} \checkmark A$ $= 2\,512,4444444$ $\approx 2\,512$ OR/OF $2\,513 \checkmark R$	1A numerator 1MA dividing by 9 1R to the nearest whole number (3)	D L2
5.1.4	0 ✓✓RT	2RT for mode = 0 (2)	D L2
5.1.5	Percentage/ <i>Persentasie</i> = $\frac{1228}{22\,612} \times 100\% \checkmark M$ $= 5,43\% \checkmark A$	1RT correct values 1M percentage calculation 1A simplification NPR AO (3)	D L1
5.1.6	$P_{(\text{Gauteng VD})} = 0\% \text{ OR/OF } 0 \text{ OR/OF no chance}$ OR/OF impossible OR/OF $\frac{0}{2716} \checkmark \checkmark A$	2A stating 0% or impossible (2)	P L2
5.1.7	$\checkmark RT$ $3\,111 - 2\,966 \checkmark M$ $= 145$ OR/OF $\checkmark M$ $\checkmark M$ $1\,228 - (161+189+327+133+82+115+26+50)$ $= 145$ OR/OF $\checkmark M$ $1\,228 - 1\,083 \checkmark M$ $= 145$	1RT reading correct values 1M subtracting values in correct order OR/OF 1M adding all the values 1M subtracting from 1 228 OR/OF 1M adding all the values 1M subtracting from 1 228 (2)	D L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L																														
5.1.8	<p style="text-align: center;">Types of voting stations used during the 2016 Local Government Elections</p> <table><thead><tr><th>Province</th><th>VDs</th><th>Permanent</th></tr></thead><tbody><tr><td>Eastern Cape</td><td>4700</td><td>4550</td></tr><tr><td>Free State</td><td>1550</td><td>1350</td></tr><tr><td>Gauteng</td><td>2700</td><td>2400</td></tr><tr><td>Kwazulu-Natal</td><td>4800</td><td>4647 ✓A</td></tr><tr><td>Limpopo</td><td>3100</td><td>2966 ✓A</td></tr><tr><td>Mpumalanga</td><td>1750</td><td>1650 ✓A</td></tr><tr><td>North West</td><td>1750</td><td>1605 ✓A</td></tr><tr><td>Northern Cape</td><td>700</td><td>684 ✓A</td></tr><tr><td>Western Cape</td><td>1600</td><td>1534 ✓A</td></tr></tbody></table> <p style="text-align: center;">Provinces</p> <p>Key ■ VDs ■ Permanent</p>		Province	VDs	Permanent	Eastern Cape	4700	4550	Free State	1550	1350	Gauteng	2700	2400	Kwazulu-Natal	4800	4647 ✓A	Limpopo	3100	2966 ✓A	Mpumalanga	1750	1650 ✓A	North West	1750	1605 ✓A	Northern Cape	700	684 ✓A	Western Cape	1600	1534 ✓A	D L2
Province	VDs	Permanent																															
Eastern Cape	4700	4550																															
Free State	1550	1350																															
Gauteng	2700	2400																															
Kwazulu-Natal	4800	4647 ✓A																															
Limpopo	3100	2966 ✓A																															
Mpumalanga	1750	1650 ✓A																															
North West	1750	1605 ✓A																															
Northern Cape	700	684 ✓A																															
Western Cape	1600	1534 ✓A																															
1A for each correctly plotted bar × 6																																	
(6)																																	

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.2.1	Sport ✓MA $= 100\% - (42,9 + 2,8 + 11 + 20,7 + 2,4 + 18,4 + 0,7)\%$ $= 1,1\%$ ✓CA OR/OF $= 100\% - 98,9\%$ ✓MA $= 1,1\%$ ✓CA	1MA subtract values 1CA correct percentage OR/OF 1MA subtract values 1CA correct percentage AO (2)	D L1
5.2.2	Car/Motorcar ✓✓RT <i>Kar/Motor</i>	1RT correct modus (2)	D L1
5.2.3	$P_{(\text{people travelling by bus})} = 7,8\%$ ✓RT $= \frac{7,8}{100}$ ✓M $= \frac{39}{500}$ ✓A OR/OF $\frac{7,8}{100} \times \frac{10}{10}$ ✓RT ✓M $= \frac{78}{1000}$ $= \frac{39}{500}$ ✓A	1RT correct percentage (7,8%) 1M out of 100 1A fraction form OR/OF 1RT correct percentage (7,8%) 1M out of 100 1A fraction form (3)	P L2
5.2.4	Number of people/ <i>Aantal mense</i> $= 542\,267 \times 42,9\%$ ✓M $= 232\,632,543$ $\approx 232\,632$ OR/OF $232\,633$ ✓CA	1M multiplying correct values 1CA number of people NPR – whole number (2)	D L1
		[31]	
		TOTAL/TOTAAL: 150	