

Soek jy 'n fantastiese tutor?

www.teachme2.com/matriek





basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**SENIOR CERTIFICATE EXAMINATIONS/
SENIORSERTIFIKAAT-EKSAMEN
NATIONAL SENIOR CERTIFICATE EXAMINATIONS/
NASIONALE SENIORSERTIFIKAAT-EKSAMEN**

**MATHEMATICAL LITERACY P2/
WISKUNDIGE GELETTERDHEID V2**

MARKING GUIDELINES/NASIENRIGLYNE

2019

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/a graph/document/diagram/Lees vanaf tabel/grafiek/diagram
SF	Correct substitution in a formula/Korrekte vervanging in 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 constant accuracy/Metode met volgehoue akkuraatheid

**These marking guidelines consist of 20 pages.
Hierdie nasienriglyne bestaan uit 20 bladsye.**

NOTE:

- If a candidate answers a question TWICE, mark only 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.
- No CA mark follows after 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.

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.
- Geen CA-punt volg na 'n afbreking nie.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.

QUESTION/VRAAG 1 [28 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	$A = \frac{750}{50} \quad \checkmark \text{ MA}$ $= 15 \text{ occupants/bewoners} \quad \checkmark \text{ A}$ $B = 2\,500 \times 30 \quad \checkmark \text{ MA}$ $= 75\,000 \quad \checkmark \text{ A}$ <p style="text-align: center;">OR/OF</p> <p>Using ratios</p> $A : 22\,500$ $8 : 12\,000$ $A = \frac{8 \times 22\,500}{12\,000} = 15 \quad \checkmark \text{ M} \quad \checkmark \text{ A} \quad \text{or/of} \quad A = \frac{22\,500}{1\,500} = 15$ $50 : B$ $1 : 1\,500$ $B = 1\,500 \times 50 \quad \checkmark \text{ M}$ $= 75\,000 \quad \checkmark \text{ A}$	<p>1MA dividing by 50</p> <p>1A occupants</p> <p>1MA multiplying</p> <p>1A litres</p> <p style="text-align: center;">OR</p> <p>1M dividing and multiplying</p> <p>1A occupants</p> <p>1M multiplying</p> <p>1A litres</p> <p>AO</p> <p style="text-align: right;">(4)</p>	D L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.2	<p>Number of days/<i>Aantal dae</i></p> $= \frac{1500}{50} \quad \checkmark \text{MA}$ $= 30 \quad \checkmark \text{A}$ <p>But July has 31 days/<i>Maar Julie het 31 dae</i> $\checkmark \text{O}$ His statement is NOT valid./<i>Sy bewering is NIE geldig nie.</i></p> <p style="text-align: center;">OR/OF</p> <p>Number of days in July 31 $\checkmark \text{A}$ $\checkmark \text{M}$ $1\,500 \times 31 = 46\,500$ or $50 \times 31 = 1\,550$</p> <p>Not valid since it is not the same values /<i>Nie geldig nie want die waardes verskil</i> $\checkmark \text{O}$</p> <p style="text-align: center;">OR/OF</p> <p>July has 31 days $\checkmark \text{A}$ $1500 \div 31 \quad \checkmark \text{M}$ $= 48,39 \text{ } \ell / \text{pp}$ $48,39 < 50$ Not valid / <i>Nie geldig nie</i> $\checkmark \text{O}$ [using any of maximum litres/month or maximum litres/day]</p>	<p>1MA dividing correct pair</p> <p>1A number of days</p> <p>1O verification</p> <p style="text-align: center;">OR/OF</p> <p>1A number of days 1M multiply</p> <p>1O verification</p> <p style="text-align: center;">OR/OF</p> <p>1 A days in July 1M dividing</p> <p>1O verification</p> <p style="text-align: right;">(3)</p>	M L4
1.1.3 (a)	<p>Total occupants/<i>Totale bewoners</i></p> $= 2 + 4 + 2 + 2 = 10 \quad \checkmark \text{MA}$ <p>Volume of water allowed/<i>Volume water toegelaat</i></p> $= (10 \times 50) \times 31 \quad \checkmark \text{MCA} \quad \checkmark \text{M}$ $= 15\,500 \text{ } \ell \quad \checkmark \text{CA}$ <p>Extra/<i>Ekstra</i> $= 20\% \times 15\,500$ $= 3\,100 \text{ } \ell \quad \checkmark \text{CA}$</p> <p>Total volume/<i>Totale volume</i> $= 15\,500 + 3\,100 \quad \checkmark \text{CA}$ $= 18\,600 \text{ } \ell$ $= 18,6 \text{ k}\ell \quad \checkmark \text{C}$</p>	<p>1MA no. of occupants</p> <p>1MCA 500 1M multiplying by 31</p> <p>1CA no. of litres</p> <p>1CA calculating 20%</p> <p>1CA Adding litres</p> <p>1C Converting to kilolitres</p> <p style="text-align: right;">(7)</p>	M L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	<p style="text-align: center;">OR/OF</p> <p>Total occupants/<i>Totale bewoners</i> $= 2 + 4 + 2 + 2 = 10$ ✓MA</p> <p>Volume of water allowed per day <i>Volume water toegelaat per dag</i> $= 50 \times 10 = 500 \text{ ℓ}$ ✓MCA</p> <p>Extra/<i>Ekstra</i> $= 20\% \times 500$ $= 100 \text{ ℓ}$ ✓CA</p> <p>Total volume per day/<i>Totale volume per dag</i> $= 500 + 100$ $= 600 \text{ ℓ}$ ✓CA</p> <p>Total volume for May/<i>Totale volume vir Mei</i> $= 600 \times 31$ ✓M $= 18\,600 \text{ ℓ}$ ✓CA $= 18,6 \text{ kℓ}$ ✓C</p> <p style="text-align: center;">OR/OF</p> <p>Total occupants/<i>Totale bewoners</i> $= 2 + 4 + 2 + 2 = 10$ ✓MA</p> <p>Increased quota per day / <i>Verhoogde kwota per dag</i> $\checkmark\text{CA}$ $= 50 + 20\% \times 50 = 60$ ✓CA</p> <p>Maximum consumption / <i>maksimum verbruik</i> $\checkmark\text{CA} \quad \checkmark\text{M} \quad \checkmark\text{CA}$ $= 60 \times 10 \times 31 = 18\,600 \text{ ℓ}$ $= 18,6 \text{ kℓ}$ ✓C</p>	<p>1MA no. of occupants</p> <p>1MCA 500</p> <p>1CA calculating 20%</p> <p>1CA Adding litres</p> <p>1M multiplying by 31</p> <p>1CA no. of litres</p> <p>1C Converting to kilolitres</p> <p style="text-align: center;">OR/OF</p> <p>1MA no. of occupants</p> <p>1CA calculating 20%</p> <p>1CA Adding litres</p> <p>1CA 600</p> <p>1M multiplying by 31</p> <p>1CA no. of litres</p> <p>1C Converting to kilolitres (7)</p>	
1.1.3 (b)	<p>Amount payable/<i>Bedrag betaalbaar</i> $\checkmark\text{MA}$ First 6 kℓ $= 6 \times R29,93 = R179,58$ ✓CA $\checkmark\text{M}$ Next 4,5 kℓ $= 4,5 \times R52,44 = R235,98$ $\checkmark\text{M}$ Next 4,8 kℓ $= 4,8 \times R114,00 = R547,20$ $\checkmark\text{M}$ Total amount/<i>Totale bedrag</i> $= R179,58 + R235,98 + R547,20$ $= R962,76$ ✓CA</p>	<p>1MA multiplying by rate</p> <p>1CA correct answer</p> <p>1M same correct column calculation</p> <p>1M same correct column calculation</p> <p>1M adding</p> <p>1CA total (6)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.1.3 (c)	<p>Accept one of the following applicable reasons</p> <ul style="list-style-type: none"> • Close taps while brushing your teeth/washing your hands • Rather take a shower than bath • Fix leaking taps, pipes etc. • Use grey water (bath or washing machine water) in the garden or to flush the toilet • Do not fill your swimming pool ✓✓O • Reduce the Capacity of the flush tank of toilet cistern • Water garden once a week • Use buckets to wash car • Install a tank or borehole <p><i>Aanvaar een van die volgende toepaslike redes</i></p> <ul style="list-style-type: none"> • Maak krane toe terwyl jy tande borsel/hande was • Stort eerder as bad • Maak lekkende krane, pype ens. reg • Gebruik grys water(bad- of wasmasjienwater) in die tuin of om die toilet te spoel • Moenie swembad volmaak nie • Verminder die kapasiteit van die spoelbak van die toilet • Maak tuin slegs een keer 'n week nat • Was die motor met 'n emmer • Installeer 'n tenk of boorgat <p style="text-align: center;">OR/OF</p> <p>Accept any other relevant answer <i>Aanvaar ander toepaslike rede</i></p>	<p>20 relevant answer</p> <p style="text-align: right;">(2)</p>	M L2
1.2	<p style="text-align: center;">✓R</p> <p>Labour day 1 = 6 hours × R129,99/h <i>Arbeid dag 1 = R779,94</i> ✓M</p> <p>Day 2/Dag 2 = 2 hours × R129,99/h = R259,98 ✓CA</p> <p>Total/Totaal = R779,94 + R259,98 = R1 039,92 ✓CA</p> <p>Cost of installing the tank/<i>Koste om tenk te installeer</i> = R12 958,00 + R1 943,70 + R1 039,92 = R15 941,62 ✓CA</p> <p>Mr Vellem's budget is NOT enough ✓O <i>Mnr. Vellem se begroting is NIE genoeg nie.</i></p> <p style="text-align: center;">OR/OF</p>	<p>1R rounding 1M 1st day labour calculation 1CA 2nd day labour calculation 1CA Adding 2 day values 1CA total cost 1O verification</p> <p style="text-align: center;">OR/OF</p>	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	$\begin{aligned} &\checkmark R \quad \checkmark CA \\ \text{Total labour} &= 6 \text{ hours} + 2 \text{ hours} = 8 \text{ hours} \\ &\checkmark M \\ \text{Labour cost} &= 8 \times R129,99 \\ &= R1\,039,92 \quad \checkmark CA \\ \\ \text{Cost of installing the tank/Koste om tenk te installeer} \\ &= R12\,958,00 + R1\,943,70 + R1\,039,92 \\ &= R15\,941,62 \quad \checkmark CA \\ \\ \text{Mr Vellem's budget is NOT enough} \quad \checkmark O \\ \text{Mnr. Vellem se begroting is NIE genoeg nie} \\ \\ &\text{OR/OF} \\ &\checkmark R \quad \checkmark CA \\ \text{Total labour} &= 6 \text{ hours} + 2 \text{ hours} = 8 \text{ hours} \\ &\checkmark M \quad \checkmark CA \\ \text{Budget} &= R15\,900 - R12\,958,00 - R1\,943,70 - R129,99 \times 8 \\ &= -R41,62 \quad \checkmark CA \\ \\ \text{Mr Vellem's budget is NOT enough} \quad \checkmark O \\ \text{Mnr. Vellem se begroting is NIE genoeg nie} \end{aligned}$	1R rounding 1CA total hours labour 1M labour calculation 1CA labour cost 1CA total cost 1O verification OR/OF 1R rounding 1CA total hours labour 1M subtracting from budget 1CA labour cost 1CA simplification 1O verification (6)	
		[28]	

QUESTION/VRAAG 2 [32 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.1 (a)	<p>NOTE: 2.1.1 IS NOT TO BE MARKED, MARKS WILL BE SCALED</p> <p>LET WEL: 2.1.1 WORD NIE GEMERK, PUNTE SAL AANGEPAS WORD</p> <p>Total surface area/Totale buite oppervlakte $= 2(L \times W) + 2(L \times H) + 2(W \times H)$ $= 2(6,5 \times 6,5) + 2(6,5 \times 12,5) + 2(6,5 \times 12,5) \text{ cm}^2$ $= 2(42,5) \text{ cm}^2 + 2(81,25) \text{ cm}^2 + 2(81,25) \text{ cm}^2$ $= 84,5 \text{ cm}^2 + 162,5 \text{ cm}^2 + 162,5 \text{ cm}^2$ $= 409,5 \text{ cm}^2$</p>	<p>1C conversion 1SF substitution 1S simplification 1CA total area</p>	M L2
2.1.1 (b)	<p>To appeal to young children. <i>Om die medisyne vir die kinders aantreklik te maak.</i></p> <p>OR/OF</p> <p>To advertise the medicine/<i>Om die medisyne te adverteer</i></p> <p>OR/OF</p> <p>To show it is for children/<i>Om aan te toon dat dit vir kinders is</i></p> <p>OR/OF</p> <p>Accept any valid reason/<i>Aanvaar enige geldige rede</i></p>	<p>2O reason</p>	M L4
2.1.2	<p>radius = $\frac{2,52 \text{ cm}}{2} = 1,26 \text{ cm}$</p> <p>10 ml = $3,142 \times (1,26 \text{ cm})^2 \times h$</p> <p>$\frac{10 \text{ cm}^3}{4,9882392 \text{ cm}^2} = h$</p> <p>2,0047...m = h</p>	<p>1A radius 1SF substituting volume 1M changing the subject of the formula 1CA height NPR</p>	M L3
2.2	<p>Number of boxes in one carton <i>Aantal bokse in een karton</i> $= 6 \times 8 \times 4$ $= 192$</p> <p>Total number of boxes <i>Totale aantal bokse</i> $= 192 \times 5$ $= 960$</p> <p>OR/OF</p> <p>Total number of boxes/<i>Totale aantal bokse</i> $= 6 \times 8 \times 4 \times 5$ $= 960$</p>	<p>In each carton 1 layer has $6 \times 8 = 48$ boxes Each carton has 4 layers $48 \times 4 = 192$ boxes They ordered 5 cartons $192 \times 5 = 960$ boxes</p> <p>1M multiplying 1A number per box</p> <p>1M multiply 1A total</p> <p>OR/OF</p> <p>1M multiplying 2 values 1M multiplying with 3rd value 1M multiplying with 4th value 1A total</p>	MP L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.3.1	Range = N – Lowest value <i>Omvang</i> = <i>N – laagste waarde</i> ✓M $4\ 527 = N - 612$ ✓SF $4\ 527 + 612 = N$ ✓M $5\ 139 = N$ ✓CA	1M writing formula 1SF substitution 1M change the subject of the formula 1CA when 76 for unknown age is used (4)	D L2
2.3.2	$612, 1\ 280, 2\ 221, 3\ 051, 3\ 429, 5\ 139$ ✓M Interquartile Range / <i>Interkwartiel omvang</i> $\checkmark A \quad \checkmark A$ $= 3\ 429 - 1\ 280$ ✓M $= 2\ 149$ ✓CA	CA from 2.3.1 1M arranging 1A Q1 1A Q3 1M subtraction 1CA Simplify (5)	D L3
2.3.3	Total/ <i>Totaal</i> $= 1\ 280 + 612 + 3\ 051 + 2\ 221 + 5\ 139 + 3\ 429 + 76$ $= 15\ 808$ ✓MCA Percentage = $\frac{76}{15\ 808} \times 100\%$ ✓RT ✓M $= 0,48$ ✓CA $\approx 0,5\%$ It is correct, due to rounding. ✓O <i>Dit is korrek as gevolg van afronding.</i>	CA from 2.3.1 1MCA adding all values 1RT unknown age value 1M % calculation 1CA simplification 1O explanation (5)	D L4
2.3.4	Number hospitalised < 6 months <i>Aantal gehospitaliseer < 6 maande</i> $= 1\ 280 \times 44,2\%$ ✓MA $= 565,76$ ✓A Number hospitalised 20+/ <i>Aantal gehospitaliseer 20+</i> $= 3\ 429 \times 7,6\%$ $= 260,6$ ✓A Difference/ <i>Verskil</i> = $565,76 - 260,60$ $= 305,1$ ✓CA ≈ 305	1MA % calculation 1A simplification 1A simplification 1CA difference NPR (4)	D L3
			[32]

QUESTION/VRAAG 3 [26 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.1.1	3 200 ✓✓ RT [Accept values from 3 100 to 3 250 Aanvaar waardes van 3 100 tot 3 250]	2RT number of copies (2)	F L2
3.1.2	Contract 2/Kontrak 2 ✓✓ RT	2RT correct contract (2)	F L2
3.1.3	<p>Total cost = fixed cost + cost per page ✓A</p> <p>✓RT = R625 per month for the first 600 pages +</p> <p>✓RT ✓M (R1 475 – R625) ÷ (4 000 – 600) per page more than 600</p> <p>= R625 for the first 600 pages + R0,25 per page extra ✓CA</p> <p><i>Totale koste = vaste koste + koste per bladsy ✓A</i></p> <p>✓RT = R625 per maand vir die eerste 600 bladsye +</p> <p>✓RT ✓M (R1 475 – R625) ÷ (4 000 – 600) per bladsy meer as 600</p> <p>= R625 vir die eerste 600 bladsye + R0,25 per ekstra bladsy ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>✓M Total cost = R625 + R0,25 (n – 600) where n is the number of pages more than 600. ✓A</p>	<p>1A setting up the equation 1RT constant cost</p> <p>1RT values from graph 1M calculating the increment per page 1CA cost per page extra</p> <p style="text-align: center;">OR/OF</p> <p>1RT constant cost 1M calculating the increment per page 1CA cost per page extra 1A setting up the equation 1A explaining the unknown in the equation (5)</p>	F L4

Q/V	Solution/Ooplossing	Explanation/Verduideliking	T&L
3.1.4	<p>Monthly photocopying costs for different contracts</p> <p>1A Starting point (0 copies ; R0,00 charge)/Beginpunt (0 kopieë ; R0,00 koste) 1A end point (4 000 ; 2 800)/Eindpunt (4 000 ; R2 800) 1A connecting points with a straight line./Verbind punte met reguit lyn.</p>		F L2

(3)

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	<p>Length /Lengte = 76 mm × 50 \checkmark_S \checkmark_M $= 3\,800\text{ mm} = 3,8\text{ m}$ \checkmark_C</p> <p>100% – 58,5 % = 41,5 %</p> <p>Length of real truck/ <i>Lengte van werklike vragmotor</i></p> <p>$= \frac{3,8\text{ m}}{41,5\%}$ \checkmark_M</p> <p>$= 9,157\text{ m}$ \checkmark_{CA}</p>	<p>1M Multiplying by 50 1S simplifying 1C conversion</p> <p>1M dividing 3,8 m by the percentage</p> <p>1CA real length (5)</p>	
3.3.2	<p>A\$ 45 × 300 \checkmark_M × R9,41564/A\$ $= R127\,111,14$ \checkmark_C</p> <p>VAT/BTW = R127 111,14 × 15 % $= R19\,066,67$ \checkmark_{CA}</p> <p>Import duties/<i>Invoerbelasting</i> $= R127\,111,14 \times 4,7\%$ $= R5\,974,22$ \checkmark_{CA}</p> <p>Cost/<i>Koste</i> = R127 111,14 + R19 066,67 + R5 974,22 $= R152\,152,03$ \checkmark_{CA}</p> <p>NOT correct/<i>NIE korrek NIE</i> \checkmark_O</p> <p style="text-align: center;">OR/OF</p> <p>Cost of 300 trucks /<i>Koste van 300 vragmotors</i> \checkmark_M $= A\\$ 45 \times 300 = A\\$ 13\,500$</p> <p>Rand value /<i>Rand waarde</i> $= A\\$ 13\,500 \times R9,41564/A\\$ = R127\,111,14$ \checkmark_C</p> <p>Total tax rate /<i>Totale belasting koers</i> $= 15\% + 4,7\% = 19,7\%$ \checkmark_A</p> <p>Total taxes = R127 111,14 × 19,7% = R25 040,89 \checkmark_{CA}</p> <p>Cost/<i>Koste</i> = R127 111,14 + R25 040,89 = R152 152,03 \checkmark_{CA}</p> <p>NOT correct/<i>NIE korrek NIE</i> \checkmark_O</p> <p style="text-align: center;">OR/OF</p>	<p>1M multiplying by 300</p> <p>1C conversion</p> <p>1CA when 15% is used</p> <p>1CA simplification</p> <p>1CA adding all costs</p> <p>1O verification</p> <p style="text-align: center;">OR/OF</p> <p>1M multiplying by 300</p> <p>1C conversion</p> <p>1A total tax rate</p> <p>1CA simplification</p> <p>1CA adding all costs</p> <p>1O verification</p> <p style="text-align: center;">OR/OF</p>	F L4

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
	$A\$ 45 \times 300 \times R9,41564/A\$$ $= R127\,111,14$ $\text{Cost /Koste} = R127\,111,14 \times 119,7\%$ $= R152\,152,03$ <p>NOT correct/NIE korrek NIE</p> <p style="text-align: center;">OR/OF</p> $\frac{159778,70}{300}$ $= R532,5956667$ $\frac{100}{119,7} \times \frac{532,5956667}{1}$ $= R444,9420774$ $\frac{444,9420774}{9,41564}$ $= A\$47,26$ <p>$A\\$45 < A\\$47,26$</p> <p>NOT correct /Nie korrek nie</p>	<p>1M multiplying by 300</p> <p>1C conversion</p> <p>1A using total tax rate</p> <p>1M multiplying with total rate</p> <p>1CA simplification</p> <p>1O verification</p> <p style="text-align: center;">OR/OF</p> <p>1M dividing by 300</p> <p>1A total tax rate</p> <p>1M dividing by 119,7%</p> <p>1S simplification</p> <p>1C conversion</p> <p>1O verification</p> <p>NPR</p>	
		(6)	
		[26]	

QUESTION/VRAAG 4 [34 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.1	SW (South west/Suidwes) ✓✓ A	2A reading direction (2)	MP L2
4.1.2	<p>Part or sections of the railway line are not seen from above. <i>'n Gedeelte van die treinspoor is nie sigbaar op die kaart</i> OR/OF The road stays continuous (whole) while the railway line is in sections. <i>Die pad is aaneenlopend (heel) terwyl die treinspoor in “stukkies” is.</i></p>	2A description (2)	MP L2
4.1.3	Toyota or 11 ✓✓ A	2A correct circle (2)	MP L2
4.1.4	<p>Proceed straight on Stateway Street until you turn right at the City Council into Arrarat Street. Then proceed straight until Alma. Destination is on the left-hand side. <i>Ry reguit met Staatsweg totdat jy regs by die Stadsraad uitdraai in Arrarat . Gaan reguit voort tot in Alma. Die bestemming is aan die linkerkant.</i> OR/OF Continue (NW) along Stateway. <ul style="list-style-type: none"> At 1st circle (13) take 2nd exit along Stateway. At 2nd circle (Smith)(14) take 3rd exit to Arrarat St. Continue in Arrarat passing further three circles Bingo (10), Alfa(8) and Engen(4) (from each circle taking 2nd exit to NE). <i>Ry (NW) met Stateway</i> <ul style="list-style-type: none"> By die 1ste sirkel neem die 2de uitgang gaan voort in Stateway By die 2de sirkel neem die 3de uitgang na Arraratstr. Gaan voort in Arrarat verby drie sirkels Bingo, Alfa en Engen (by elke sirkel neem die 2de uitgang Noordoos) </p>	<p>1A straight on Stateway 1A turn right 1A Arrarat 1A straight until Alma 1A destination on left-hand</p> <p>OR/OF</p> <p>1A exit point 1A correct street 1A exit point 1A description 1A naming the circles</p> <p>(5)</p>	MP L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.5	<p>Distance between Alfa and Engen circles = 5mm ✓ A <i>Afstand tussen Alfa- en Engensirkels = 5mm</i> $\therefore 5\text{mm} = 500\text{m}$</p> <p>1mm = 100m ✓ CA or 1: 100 000 ✓ A</p> <p>Distance between circles 13 and 14 is 28 mm = 1,4 km <i>Afstand tussen sirkels 13 en 14 is 28 mm = 1,4 km</i> $\therefore 28\text{ mm} = 1\,400\text{ m}$ 1mm = 50m or 1 : 50 000 ✓ CA</p> <p>This map is NOT drawn to scale. ✓ O <i>Die kaart is nie volgens skaal geteken nie.</i> 4 – 7 for distance between Afla and Engen 24 – 29 for distance between 13 and 14</p>	<p>1A measuring given distance</p> <p>1CA simplification or scale</p> <p>1A measure distance</p> <p>1CA simplification or scale</p> <p>1O explanation</p> <p>(5)</p>	MP L3
4.1.6	<p>5 minutes = $\frac{5}{60} \approx 0,083\text{ hour}$ ✓ C</p> <p>Distance = Speed \times time</p> <p>4 = speed \times 5 min ✓ MA</p> <p>Speed/<i>spoed</i> = $\frac{\text{Distance/ Afstand}}{\text{Time/ Tyd}} = \frac{4}{0,083}$ = 48 km/h ✓ CA</p> <p>The car's speed was within the speed limit. ✓ O <i>Die motor se spoed is minder as die spoedbeperking</i></p> <p>OR/OF</p> <p>Speed/<i>spoed</i> = 4 km \div 5 min ✓ MA</p> <p>= 0,8 km/min \times 60 min/hour ✓ C</p> <p>= 48 km/h ✓ CA</p> <p>The car's speed was less than the limit. ✓ O <i>Die motor se spoed is minder as die spoedbeperking</i></p>	<p>1C minutes to hours</p> <p>1MA substituting</p> <p>1CA Speed value</p> <p>1O conclusion NPR</p> <p>OR/OF</p> <p>1MA substituting</p> <p>1C converting</p> <p>1CA Speed value</p> <p>1O conclusion</p> <p>(4)</p>	M L4
4.1.7	<p>$P = \frac{3}{20}$ ✓ RT</p> <p>= 0,15 ✓ S</p> <p>Valid/<i>Geldig</i> ✓ O</p>	<p>1RT numerator</p> <p>1RT denominator</p> <p>1S simplification</p> <p>1O conclusion</p> <p>(4)</p>	P L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.2.1	$104 : 88 \quad \checkmark \text{RT}$ $\quad \quad \quad \checkmark \text{A}$ $= 13 : 11 \quad \checkmark \text{S}$	1RT correct values 1A correct order 1S simplification (3)	D L2
4.2.2	$\frac{203}{1724} \quad \checkmark \text{RT}$ $\quad \quad \checkmark \text{RT}$ $= 0,11774942$ $\approx 0,12 \quad \checkmark \text{CA}$	1RT numerator 1RT denominator 1CA simplification NPR (3)	P L2
4.2.3	Total NOT electrical repairs/ <i>Totaal nie elektriese herstelwerk nie</i> $= 1 + 206 + 103 = 310 \quad \checkmark \text{A}$ $P_{(\text{NOT})} = \frac{310}{368} \times 100\% \quad \checkmark \text{M}$ $\quad \quad \checkmark \text{RT}$ $\approx 84\% \quad \checkmark \text{CA}$ <p style="text-align: center;">OR/OF</p> $P_{(\text{electr})} = \frac{58}{368} \quad \checkmark \text{RT}$ $P_{(\text{NOT})} = 1 - \frac{58}{368}$ $= \frac{310}{368} \times 100\% \quad \checkmark \text{A} \quad \checkmark \text{M}$ $\approx 84\% \quad \checkmark \text{CA}$ <p style="text-align: center;">OR/OF</p> $P_{(\text{electr})} = \frac{58}{368} \times 100\% \quad \checkmark \text{RT} \quad \checkmark \text{M}$ $\approx 16\%$ $P_{(\text{NOT})} = 100\% - 16\% \quad \checkmark \text{A}$ $= 84\% \quad \checkmark \text{CA}$	1A numerator 1RT denominator 1M multiplying with 100% 1CA rounded simplification <p style="text-align: center;">OR/OF</p> 1RT denominator 1A numerator 1M multiplying with 100% 1CA rounded simplification <p style="text-align: center;">OR/OF</p> 1RT denominator 1M multiplying with 100% 1A subtracting from 100% 1CA simplification (4)	P L3
		[34]	

QUESTION/VRAAG 5 [30 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.1.1	<p>Motor claims/<i>Motor eise</i> ✓RT $= R100\,712\,182 - (R18\,513\,071 + R15\,498\,565 + R7\,339\,724 + R6\,463\,292)$ ✓M $= R100\,712\,182 - R47\,814\,652$ $= R52\,897\,530$</p> <p>$\approx R53$ million/<i>miljoen</i> ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>Motor claims/<i>Motoreise</i> ✓RT $= 53\% \times R100\,712\,182$ ✓M $= R53\,377\,456$ $\approx R53$ million/<i>miljoen</i> ✓CA</p>	<p>1RT correct values</p> <p>1M subtracting from the total</p> <p>1CA rounded value</p> <p style="text-align: center;">OR/OF</p> <p>1RT correct values 1M percentage calculation 1CA rounded value</p> <p style="text-align: right;">(3)</p>	F L2
5.1.2	<p>Total/<i>Totaal</i> 2016 $\times 60\% = R59\,438\,533$ ✓M</p> <p>Total/<i>Totaal</i> 2016 $= R59\,438\,533 \div 60\%$ ✓M $= R99\,064\,221,67$ ✓A</p> <p>✓M Difference/<i>Verskil</i> $= R99\,064\,221,67 - R87\,101\,354$ $= R11\,962\,867,67$ ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>2016 60% - R59 438 533 10% - R9 906 422,17 ✓M 16% - R15 850 275,47 7% - R6 934 495,52 $\times 2$ ✓M</p> <p>Total/Total : R99 064 221,67 ✓A Difference/<i>Verskil</i> $= R99\,064\,221,67 - R87\,101\,354$ ✓M $= R11\,962\,867,67$ ✓CA</p>	<p>1M relating values</p> <p>1M dividing</p> <p>1A simplification</p> <p>1M subtracting from 2017 value 1CA difference</p> <p style="text-align: center;">OR/OF</p> <p>1M finding rand values</p> <p>1M double the 7% value</p> <p>1A simplification</p> <p>1M subtracting from 2017 value 1CA difference</p> <p style="text-align: right;">(5)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.1.3	<p>Percentage difference = $\frac{\text{New value} - \text{Old value}}{\text{Old value}} \times 100\%$ ✓A</p> <p>Persentasie verskil = $\frac{\text{Nuwe waarde} - \text{Ou waarde}}{\text{Ou waarde}} \times 100\%$</p> <p>= $\frac{R11829111 - R15498565}{R15498565} \times 100\%$ ✓A ✓RT</p> <p>= -23,676...% ✓CA</p> <p>≈ -24%</p>	<p>1A concept of percentage difference</p> <p>1M difference 1RT correct values</p> <p>1CA percentage</p> <p>(4)</p>	D L3
5.1.4 (a)	<p>Percentage Household/Persentasie Huishoudelik</p> <p>= $\frac{7\,339\,724}{100\,712\,182} \times 100\%$ ✓RT ✓M</p> <p>= 7,28782...% ✓A</p> <p>Percentage Other/Persentasie Ander</p> <p>= $\frac{6\,463\,292}{100\,712\,182} \times 100\% = 6,41758...\%$ ✓A</p> <p>Her statement is valid; the percentage should be 6% if rounded down. ✓O</p> <p>Haar stelling is geldig; die persentasie moet 6% wees indien dit afgerond word.</p> <p style="text-align: center;">OR/OF</p> <p>Motor claims 2015 = 53% × R100 712 182 = R53 377 456</p> <p>Total of the claims = R18 513 071 + R15 498 565 + R7 339 724 + R53 377 456 + R6 463 292 ✓RT = R101 192 108</p> <p>Other % = $\frac{6\,463\,292}{101\,192\,108} \times 100\%$ ✓M = 6,38% ✓A</p> <p>Household % = $\frac{7\,339\,724}{101\,192\,108} \times 100\%$ = 7,25% ✓A</p> <p>Her statement is valid; the percentage should be 6% if rounded down. ✓O</p> <p>Haar stelling is geldig; die persentasie moet 6% wees indien dit afgerond word.</p>	<p>1RT correct values 1M multiplying with 100%</p> <p>1A simplification</p> <p>1A simplification</p> <p>1O verification</p> <p style="text-align: center;">OR/OF</p> <p>1RT correct values</p> <p>1M multiplying with 100%</p> <p>1A simplification</p> <p>1A simplification</p> <p>1O verification</p>	D L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	<p style="text-align: center;">OR/OF</p> <p>Rand value of the sectors /Randwaarde van die sektore</p> <p style="text-align: center;">✓RT</p> $= 7\% \times R100\,712\,182 \quad \checkmark \text{MA}$ $= R7\,049\,852,74 \quad \checkmark \text{A}$ <p style="text-align: center;">✓O</p> <p>Both household and other were supposed to be R7 049 852, but it is not.</p> <p><input type="checkbox"/> Her statement is valid ✓O</p>	<p style="text-align: center;">OR/OF</p> <p>1RT correct values 1MA percentage calculation 1A simplification</p> <p>1O explanation</p> <p>1O verification</p> <p style="text-align: right;">(5)</p>	
5.1.4 (b)	<p>When subtracting the percentages of Commercial, Home owner, Household and motor from 100% Other will be 7% due to %values in a circle diagram. ✓✓O</p> <p>OR Percentages were rounded.</p> <p><i>As die persentasies van Kommersieel, Huiseienaar, Huishoudelik en motor van 100% afgetrek word sal ander 7% wees a.g.v. %waardes in die sirkeldiagram.</i></p> <p>OF Persentasies is afgerond.</p>	<p>2O reflecting</p> <p style="text-align: right;">(2)</p>	D L4
5.1.5	<p>Number of successful claims/Aantal suksesvolle eise</p> $= 14,0858\% \times 2\,144 \quad \checkmark \text{MA}$ $\approx 302 \quad \checkmark \text{A}$ <p>Average paid out/Gemiddeld uitbetaal</p> $= \frac{R11\,829\,111}{302} \quad \checkmark \text{M}$ $= R39\,169,24 \quad \checkmark \text{CA}$	<p>1MA % calculation</p> <p>1A simplification</p> <p>1M dividing</p> <p>1CA simplification</p> <p style="text-align: right;">(4)</p>	F L3
5.1.6	<p>The percentage of commercial claims went down from 2015 to 2016 but then again went up from 2016 to 2017. ✓A</p> <p><i>Die persentasie van kommersiële eise het verminder van 2015 tot 2016 maar het weer vermeerder van 2016 tot 2017</i></p> <p>OR</p> <p>From 2015 to 2017 the trend is it increased ✓A</p> <p><i>Vanaf 2015 tot 2017 is die tendens dat dit vermeerder</i></p>	<p>1A down 2016 1A up 2017</p> <p style="text-align: right;">(2)</p>	D L4
5.2	<p>Number of days/Aantal dae</p> $= 21 \text{ (July/Julie)} + 31 + 30 + 31 + 3 \quad \checkmark \text{MA}$ $= 116 \quad \checkmark \text{A}$ <p>It is not valid./Dit is nie geldig nie. ✓O</p> <p style="text-align: center;">OR/OF</p> <p>131 days is more than 4 months</p> <p>It is not valid</p> <p><i>131 dae is meer as 4 maande</i></p> <p><i>Dit is nie geldig nie</i></p>	<p>1MA adding correct days</p> <p>1A simplification</p> <p>1O verification</p> <p style="text-align: right;">(3)</p>	D L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.3	<p>Accept one of the following</p> <p>The insurance company believes the claim is not valid.</p> <p>They suspect it is a fraudulent claim.</p> <p>They don't believe the item was specified.</p> <p>Under insured / Unpaid premiums</p> <p>Too many claims to date ✓✓O</p> <p>Negligence on the side of the client</p> <p><i>Die versekeringsmaatskappy glo dat die eis nie geldig is nie</i></p> <p><i>Hulle vermoed dat dit 'n oneerlike eis is.</i></p> <p><i>Hulle glo nie dat die item gespesifiseer is nie</i></p> <p><i>Onder verseker / Onbetaalde premies</i></p> <p><i>Te veel keer ge-eis tot datum</i></p> <p><i>Nalatigheid aan die kant van die eiser.</i></p> <p>OR/OF</p> <p>Any other valid reason/<i>Enige ander geldige rede</i></p>	<p>20 reason</p> <p>(2)</p>	<p>F</p> <p>L4</p>
		[30]	