basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

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

MATHEMATICAL LITERACY P1/*WISKUNDIGE GELETTERDHEID V1*

2022

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*
*****	Refer to Notes/Verwys na notas

These marking guidelines consist of 15 pages and 2 pages of notes
Hierdie nasienriglyne bestaan uit 15 bladsye en 2 bladsye notas.

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NOTE:
- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however it stops at the second calculation error.
- 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.*
- *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	Cost of 1 yoghurt/*Koste van 1 jogurt* ✓RT = R10,99 ÷ 6 ✓MA = R1,83	1RT correct values 1MA dividing by 6 (2)	F L1
*1.1.2	Number of apples per bag/ *Aantal appels per sak* = R22,99 ÷ R2,87 ✓MA = 8,01 = 8 ✓A	1MA dividing correct values 1A simplification (2)	F L1
1.1.3	Total cost in rand per lunch pack/ *Totale koste in rand per kospakkie* ✓RT ✓M = R5,63 + R3,54+ R2,87+ R1,83+ R1,57+ R1,55+ R1,37 = R18,36	1RT all correct values 1M adding correct values (2)	F L1
1.1.4	Selling price of ONE lunch pack/ *Verkoopprys van EEN kospakkie* ✓MA = R18,36 + R16,64 = R35,00 ✓A	1MA adding correct values 1A simplification (2)	F L1
*1.1.5	Profit is the difference between the Selling price and the Cost price Yvette makes when selling the lunch packs/ ✓✓A *Wins is die verskil tussen die verkoopprys en die kosprys wat Yvette maak deurdat sy kospakkies verkoop.*	2A difference between SP and CP (2)	F L1

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
*1.1.6	✓RT 135 : 85 ✓MA 27 : 17 ✓MCA	1RT correct values 1MA values in correct order. 1MCA simplification MCA if order is correct (3)	F L1
1.2.1	Tree diagram/*Boomdiagram* ✓✓A	2A tree diagram (2)	P L1
1.2.2	(a) Brown Bread/*Bruinbrood* ✓✓A (b) RT ✓✓A	2A correct option 2A correct outcome (4)	P L1
1.2.3	6 ✓✓A	2A correct number (2)	P L1
*1.2.4	2 ✓✓A	2A correct number (2)	P L1
1.3.1	Box-and-whisker /*Mond-en-snor, Houer-en-punt* ✓✓A	2A correct name (2)	D L1
1.3.2	Inter-Quartile Range/*Interkwartielomvang* ✓✓A	2A explanation (2)	D L1
*1.3.3	270 ✓✓RT	2RT correct value (2)	D L1
*1.3.4	Difference/*Verskil* ✓RT = 440 – 140 ✓RT = 300 ✓CA	1RT correct value 1RT correct value 1CA simplification CA if one value is correct and subtracting (3)	D L1
		[32]	

QUESTION/*VRAAG* 2 [32 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	BGD 0016 ✓✓A	2A correct reference number **AO** (2)	F L1
2.1.2	Easier to read numbers on long bank statements **OR** to identify which clients have made payments to their accounts **OR** convenience **OR** filing purposes/ ✓✓A *Makliker om getalle te lees op lang bankstate **OF** om die kliente te identifiseer wie die paaiemente na hulle rekeninge gemaak het **OF** gemak **OF** liasering doeleindes*	2A correct explanation (2)	F L4
*2.1.3	A = R3 205,51 – R3 206,00 ✓MA = – R0,49 ✓A **OR/*OF*** A = R1 498,14 – R1 498,63 ✓MA = - R0, 49 ✓A	1MA subtracting correct values 1A simplification **OR/OF** 1MA subtracting correct values 1A simplification **AO** (2)	F L1
2.1.4	Total amount due excluding VAT/*Totale bedrag betaalbaar BTW uitgesluit* $= \text{R2 } 340{,}73 \times \frac{100}{115}$ ✓MA = R2 035,42 ✓A **OR/*OF*** = R2 340,73 ÷ 1,15 ✓MA = R2 035,42 ✓A **OR/*OF*** $\text{VAT amount} = \text{R2 } 340{,}73 \times \frac{15}{115}$ = R305,31 ✓MA Total amount excluding VAT = R2 340,73 – R305,31 = R2 035,42 ✓A	1MA multiplying by $\frac{100}{115}$ 1A simplification **OR/*OF*** 1MA dividing by 1,15 1A simplification **OR/*OF*** 1MA calculating VAT 1A calculating amount before VAT (2)	F L2

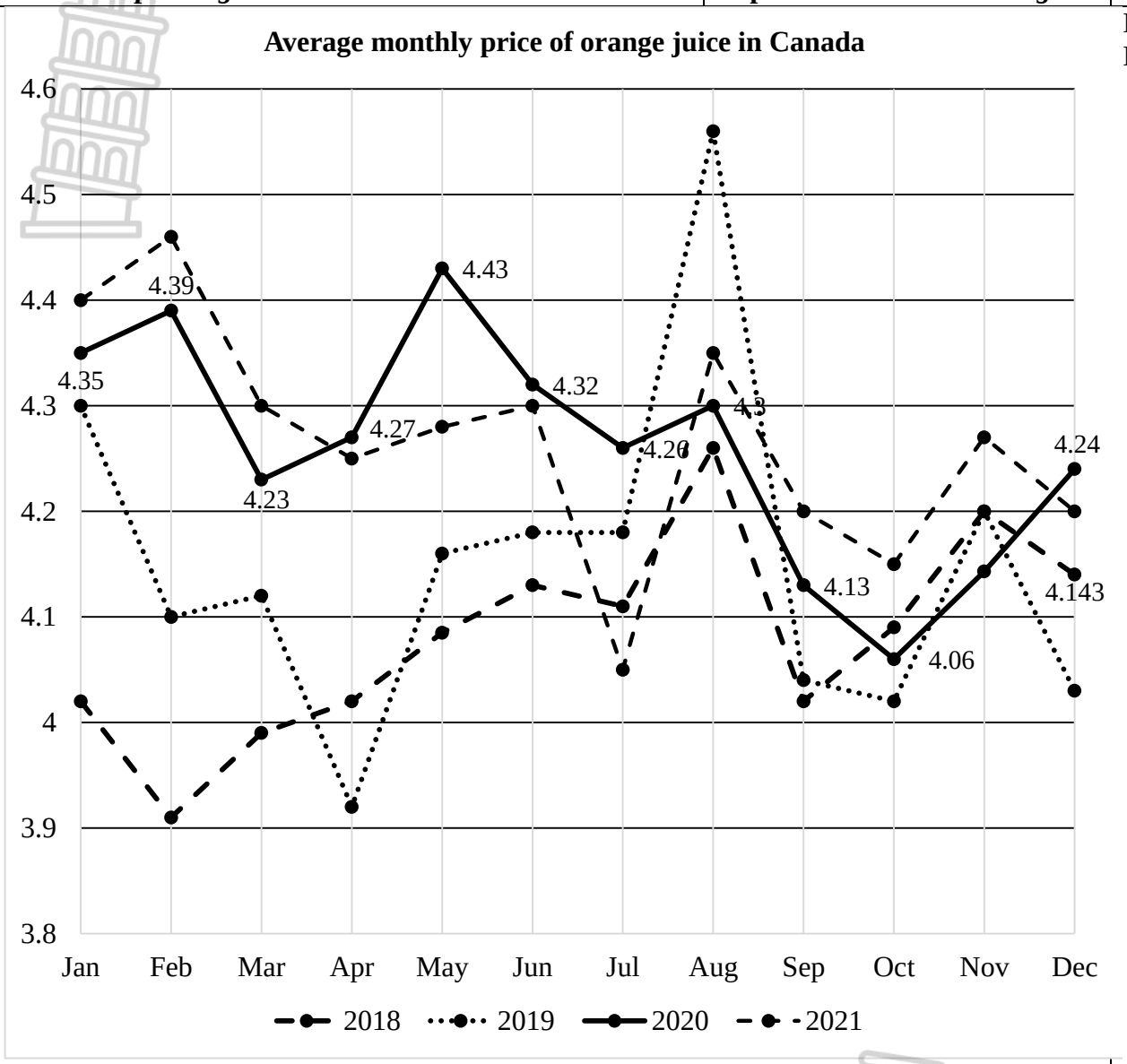
Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.5	Percentage/*Persentasie* ✓RT $= \frac{\text{R1 498,63}}{\text{R2 340,73}} \times 100\%$ ✓RT = 64,02304378 % ✓CA = 64,02 % ✓R	1RT correct levy 1RT correct denominator 1CA simplification CA if one value is correct 1R rounding (4)	F L2
*2.1.6	All electronic bank payments **OR** All Bank Deposits **OR** Cheques ✓✓A *Alle elektroniese bank betalings **OF** Alle bank depositos **OF** Tjeks*	2A correct option (2)	F L1
2.1.7	Total amount collected/*Totale bedrag gekollekteer* ✓RT = 49 × R30,90 ✓MA = R1 514,10 ✓CA	1RT identifying correct levy 1MA multiplying correct values 1CA simplification correct calculation using the standard levy (3)	F L2
*2.1.8	Standard Levy increase/*Standaard heffings verhooging* = R1 498,63 × 6,45% ✓MA = R96,661635 = R96,66 ✓CA Standard Levy after increase/ *Standaard heffings na verhooging* = R1 498,63 + R96,66 ✓MCA = R1 595,29 ✓CA *(Accept R1 595,30)* **OR/*OF*** ✓A $= \text{R1 498,63} \times \frac{106,45}{100}$ ✓M ✓M = R1 595,29 ✓CA *(Accept R1 595,30)*	1MA correct value multiplied by 6,45% 1CA simplification 1MCA adding the increase 1CA simplification **OR/*OF*** 1A calculating 106,45% 1M multiplying by 106,45% 1M dividing by 100 1CA simplification (4)	F L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.1	Transport fee annually/ *Jaarlikse vervoerkoste* ✓MA = 2 × R929,00 × 11 ✓MA = R20 438,00 ✓ CA	 1MA multiplying R929,00 by 2 1MA multiplying by 11 1CA simplification (3)	F L2
2.2.2	After care for/*nasorg vir* 2: R7 700 × 2 = R15 400 ✓A School fees 2nd child with 10% discount: *Skoolfooie vir 2de kind met 10%-afslag* ✓MA R30 723 – R3 072,30 = R27 650,70 ✓CA Total school fee/*Totale skoolfooie* = R30 723 + R27 650,70 = R58 373,70 ✓CA Discount for paying early/*Afslag vir vroeg betaling* ✓MA = 7,5% × R58 373,70 = R4 378,03 School fee payable/ *Skoolfooie betaalbaar* = R58 373,70 – R4 378,03 = 53 995,67 ✓CA Total spent by parent/*Totaal Spandeer deur ouer*: After care + School fees+ Transport *Nasorg + Skoolfooie + Vervoer* = R15 400 + R53 995,67 + R20 438 ✓M = R89 833,67 ✓CA	**CA from Question 2.2.1** 1A after care fee 1MA calculating discount 1CA discounted School Fees by 10% 1CA total fee 1MA calculating 7,5% 1CA discounted school fees 1M adding all values 1CA total spending Aftercare: 1 mark 2nd learner fees: 2 marks Total fees – discount: 3 marks Adding and total: 2 marks (8)	F L3 **TR**
		[32]	

QUESTION/*VRAAG* 3 [21 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1	Northern Cape (NC) /*Noord-Kaap (NK)* ✓✓RT	2RT correct answer (2)	D L1
*3.1.2	Estimated Total(Eastern Cape)/*Geskatte Totaal(Oos-Kaap)* ✓RT ✓MA (3 050 + 6 513 + 1 991) thousands/duisende = 11 554 000 ✓CA	1RT correctly estimated values 1MA adding values 1CA answer in correct format CA two correct values in thousands Penalty for omitting thousands = 2/3 marks **AO** (3)	D L1
3.1.3	✓C ✓M 2 400, 444 = $\frac{2\,545+5\,182+4\,330+6\,513+628+1\,527+\mathbf{A}+84+596}{9}$ ✓A **A** + 21 405 = 2 400, 444 × 9 ✓MA ✓MCA **A** = 21 603,996 – 21 405 = 198,996 ✓CA His assumption is valid/*Sy aanname is geldig* ✓O **OR/*OF*** ✓M 2 400 444 × 9 provinces/*provinsies* = 21 603 996 ✓MCA = 21 603,996 thousand/*duisend* ✓C ✓MCA ✓A A = 21 603,996 – (2 545+5 182+4 330+6 513+628+ 1 527+84+596) = 198,996 ✓CA His assumption is valid/*Sy aanname is geldig* ✓O	1M concept of mean 1C converting to table values 1A adding table values 1MA multiplying by 9 1MCA simplification 1CA simplification 1O conclusion **OR/*OF*** 1M multiplying by 9 1MCA simplification 1C converting to table values 1MCA subtracting 1A adding rest of values 1CA simplification 1O conclusion (7)	D L4 **TR**
3.2.1	Numerical data/*Numeriese Data* ✓✓A	2A correct answer (2)	D L1
3.2.2	A = 25% – (5 + 2 + 2)% ✓MA = 16% ✓CA	1MA subtracting correct value 1CA simplification **AO** (2)	D L2

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.2.3	Horticulture/*Tuinbou* = 27% × R317,6 billion/*miljard* ✓MA = R85,752 billion/miljard ✓CA = R 85 752 million/miljoen ✓C	1MA calculating % 1CA simplification 1C converting to million (3)	D L2
3.2.4	South Africa has other livestock like goats and pigs whose percentage is <u>very small</u>/ *Suid Afrika het ander vee soos bokke en varke wie se persentasie <u>baie klein</u> is.* ✓✓A **OR/*OF*** Any other poultry that the percentage is <u>to small</u>/ *Enige ander pluimvee wat se persentasie <u>te klein</u> is*	2A correct answer (2)	D L4
		[21]	

QUESTION/*VRAAG* 4 [32 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	February/*Februarie* 2019 CAD 4,10 ✓RT January/*Januarie* 2019 -CAD 4,30 ✓M Hence cost/*Gevolglik kos* CAD 0,20 less/*minder* ✓A	1RT correct values 1M subtracting 1A simplification (3)	D L2
4.1.2	✓RT ✓RT February/*Februarie* 2018 **OR/*OF*** ✓RT 02/2018 ✓RT	1RT correct month 1RT correct year (2)	D L2
*4.1.3	November 2018 ✓RT November 2019 ✓RT **OR/*OF*** 11/2018 ✓RT 11/2019 ✓RT **OR/*OF*** ✓RT November 2018 and 2019 ✓RT	1RT correct month 1RT correct years (2)	D L2
*4.1.4	4,06 | 4,13 | 4,143 | 4,23 | 4,24 | 4,26 4,27 | 4,3 | 4,32 | 4,35 | 4,39 | 4,43 ✓A ✓RT Median/*Mediaan* $= \frac{4,26+4,27}{2}$ ✓M Median/*Mediaan* = CAD 4,265 ✓A	1A arranging in order 1RT correctly middle values 1M concept of median (÷2) 1A simplification (4)	D L3
*4.1.5	✓A The price increases steadily until it reaches June, thereafter it decreases slightly/*Die prys verhoog geleidelik totdat dit Junie bereik, waarna dit effens afneem.* ✓A	1A increase 1A indicate decrease (2)	D L4
*4.1.6	Price for March 2021/*Prys vir Maart 2021* CAD4,46 - CAD0,16 =CAD4,30 ✓A Percentage Increase/*Persentasie toename* ✓MCA ✓A $= \frac{4,30-4,23}{4,23\ \checkmark A} \times 100\%$ = 1,65% ✓CA	1A finding price of March 1MCA substituting new value 1A substituting old value 1A denominator 1CA simplification No penalty for unit (5)	D L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.1.7			D L2

2021	M	A	M	J	J	A	S	O	N	D
– ● –	4,28	4,3	4,05	4,35	4,2	4,15	4,27	4,2	4,28	4,3

1MCA for 3 points plotted correctly
OR
2A for 6 points plotted correctly
OR
3A for 10 points plotted correctly
AND
1CA joining points

(4)

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2	<u>Cape Town/*Kaapstad*</u> ✓RT Fixed Monthly/*Vaste maandelikse koste* = R104,50 6 kℓ × R15,10 = R 90,60 4,5 kℓ × R20,75 = R 93,38 ✓S 24,5 kℓ × R28,20 = R690,90 10 kℓ × R52,04 = <u>R520,40</u> **= <u>R1499,78</u>** ✓CA <u>Ekurhuleni</u> Fixed Monthly/*Vaste maandelikse koste* = R0,00 6 kℓ × R13,50 = R81,00 9 kℓ × R22,24 ✓RT = R200,16 ✓S 15 kℓ × R27,24 = R408,60 15 kℓ × R33,90 = <u>R508,50</u> **= <u>R1198,26</u>** ✓CA Difference per month/*Verskil per maand*: R1499,78 – R1198,26 = R301,52 ✓MCA Difference per year/*Verskil per jaar*: R301,52 × 12 = R3618,24 ✓MCA He is incorrect/*Hy is nie korrek nie*. ✓O	1RT fixed monthly 1RT using correct values 1S calculating tariffs 1CA finding total cost 1RT using correct values 1S calculating tariffs 1CA finding total cost 1MCA finding monthly difference 1MCA finding yearly difference 1O correct conclusion (10)	F L4 **TR**
		[32]	

QUESTION/*VRAAG* 5 [33 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
5.1.1	Three million, four hundred and fifty seven thousand, nine hundred and twenty rand/ ✓✓A *Drie miljoen vier honderd sewe en vyftig duisend nege honderd en twintig rand.*	2A correct answer (2)	F L1
5.1.2	$\frac{1}{3}$ withdrawal/*ontrek* $= \frac{1}{3} \times$ R3 457 920 ✓MA = R1 152 640 ✓A	1MA multiplying by fraction 1A simplification **AO** (2)	F L1
5.1.3 (a)	Tax/*Belasting* R130 500 + 36% of taxable income above 1 050 000 ✓A *van belasbare inkomste* R130 500 + 36% (R3 457 920,00 − R1 050 000,00) ✓SF R130 500 + (36% × R2 407 920) ✓S R130 500 + R866 851,20 ✓MCA = R997 351,20 ✓CA Her statement is not correct/ *Haar bewering is nie korrek nie.* ✓O	1A correct tax bracket 1SF correct substitution 1S simplification 1MCA simplification 1CA simplification 1O not correct (6)	F L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.1.3 (b)	Loan amount/*Lening bedrag* ✓A = R3 457 920,00 ÷ 9,8798 ✓MA = R349 998,99 ✓CA = R350 000,00 **OR/*OF*** R350 thousand/*duisend* ✓R ***OR/OF*** Loan amount/*Lening bedrag* = L $\frac{9,8798}{1} = \frac{3\ 457\ 920}{L}$ ✓A $L = \frac{3\ 457\ 920}{9,8798}$ ✓MA = R349 998,99 ✓CA = R350 000,00 **OR/*OF*** R350 thousand/*duisend* ✓R	1A using correct values 1MA dividing by 9,8798 1CA simplification 1R rounded to nearest 1 000 **OR/OF** 1A using correct values 1MA dividing by 9,8798 1CA simplification 1R rounded to nearest 1 000 (4)	F L3
5.1.3 (c)	Total interest/*Totale rente* $= R350\ 000 \times \frac{7,8}{100} \times 3$ ✓MA = R 81 900 ✓MCA Total amount/*Totale bedrag* =R81 900 + R350 000 ✓MCA = R431 900 ✓CA	**CA from Question 5.1.3(b)** 1MA multiply by % and 3 1MCA simplification At least two correct values 1MCA adding values 1CA simplification (4)	F L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.2.1	Determine the exchange rate/*Bepaal die wisselkoers* 0,0969907 NZD = 1 ZAR ✓RT 0,0581765 € = 1 ZAR ✓RT ∴ $\frac{0,0969907 \text{ NZD}}{0,0969907} = \frac{0,0581765 €}{0,0969907}$ ✓M ∴ 1 NZD = 0,59981524 € ✓CA	 1RT correct exchange rate 1RT correct exchange rate 1M dividing by exchange rate 1CA simplification (4)	F L2
*5.2.2	Total cost/*Totale koste* 0,0969907 NZD = 1 ZAR 0,0581765 € = 1 ZAR Skilled migrant visa/*Geskoolde migrante visa* $= \frac{2\ 093}{0,0581765} \times 1$ ✓MA = R35 976,726 = R35 976,73 ✓A Visa for entrepreneurs/ *Visa vir entrepreneurs* $= \frac{4\ 745}{0,0969907} \times 1$ ✓MA = R48 922,21625 = R48 922,22 ✓A = R35 976,73 + R48 922,22 ✓MCA = R84 898,95 ≈ R84 900 ✓R	 1MA dividing by exchange rate 1A simplification 1MA dividing by exchange rate 1A simplification 1MCA adding values 1R simplification NP for early rounding (6)	F L3 **TR**

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
5.3.1	Graph/*Grafiek* A ✓A As the months go by it costs less Chinese yen to buy one US dollar **OR** The scale on the vertical axis was manipulated to show a steeper decline/ ✓✓O *Soos die maande verby gaan kos dit minder jen om een VSA dollar te koop **OF** Die skaal van die vertikale as was gemanipuleer om 'n skerper afname te toon.*	1A Graph A 2O correct reason (3)	D L4
5.3.2	Using a different scale. *Deur gebruik te maak van 'n ander skaal.* ✓✓O	2O correct reason (2)	D L4
		[33]	
		TOTAL/*TOTAAL*: 150	

NOTES:	
Level 4 Questions: Calculations must be evident in order to award the conclusion/opinion mark. When rounding it must be correctly rounded to a minimum of 2 decimal places unless stated otherwise. In Level 3 and Level 4 type Questions correct early rounding will not be penalised.	
QUESTION 1	
1.1.2	Accept: R22,99 ÷ 8 = R2,87 Therefore, there are 8 apples
	Accept reverse calculation i.e. R2,87 × 8 = R22,99
1.1.5	Cover expenses and still able to make extra = 2 marks
1.1.6	Unit Ratio = 3 marks $\frac{135}{135} : \frac{85}{135}$ 1 : 0,629629629 **OR** $\frac{135}{85} : \frac{85}{85}$ 1,588235294 : 1 Accept accurate reverse calculation
1.2.4	If answer is 3 = 1/2 marks 3/6 = 0 marks 2/4 = 1/2 marks
1.3.3	If calculated = 2 marks If the median of store B (245) used = 1/2 marks
1.3.4	Use Store A = 1/3 marks (CA)
QUESTION 2	
2.1.3	If a positive R0,49 is given = 1/2 marks
2.1.6	Acceptable examples: Bank deposit EFT – card swipe Debit order Stop order Internal Transfer
2.1.8	Any other value from addendum × 6,45% = 3/4 marks
QUESTION 3	
3.1.2	AO - 11 554 = 2/3 marks

QUESTION 4	
4.1.3	As the question is indicated (wording) the following can also be accepted: 1) Sept 2018 and Oct 2019 2) Nov 2020 and Dec 2018 3) Jan 2019 and Aug 2020 = 1/2 marks
4.1.4	Must show 4,265 in order to get the mark for 4,27
4.1.5	Steadily increasing to June then decline in July month = full marks
	Upward trend and downward trend = 1/2 marks
4.1.6	Candidates left out % sign. Awarded full marks. Percentage is implied in "percentage increase"
QUESTION 5	
5.2.2	No penalty for early rounding: = R36 000 + R48 900 ≈ R84 900
	If multiplying and adding (the same unit) = 2/6 marks (MCA;R)

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