



# **basic education**

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Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS**

### **MATHEMATICAL LITERACY P1**

**2023**

**MARKS: 150**

**TIME: 3 hours**

**This question paper consists of 13 pages and an addendum with 3 annexures.**

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:
  - ANNEXURE A for QUESTION 2.1
  - ANNEXURE B for QUESTION 3.1
  - ANNEXURE C for QUESTION 3.2
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL calculations clearly.
7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.


**QUESTION 1**

1.1

A generator is a useful device that can be used to provide an alternate source of electricity during a power outage.

Shown below is a picture of a generator with different payment options.

**PAYMENT OPTIONS OF A GENERATOR**

<b>Cash price</b>	<b>Hire-purchase</b>	<b>Online credit (via Mobicred)</b>
R10 999 (including 15% VAT)	Deposit: 10%	
	Instalment: R534,14 pm $\times$ 24 months	Instalment: R1 006 pm $\times$ 12 months
	Interest rate: 14,75%	Interest rate: 9,76%

[Adapted from [www.muncha.com](http://www.muncha.com)]

Use the information above to answer the questions that follow.

1.1.1 Give TWO payment options for this generator. (2)

1.1.2 Define *hire-purchase* within the given context. (2)

1.1.3 Write down the interest rate if the generator was bought on hire-purchase. (2)

1.1.4 Calculate the total cost of the generator using Mobicred. (2)

1.1.5 A 12,5% discount is given on the cash price.

Calculate the amount of discount given if the generator is purchased for cash. (2)

1.1.6 Name the type of interest charged if the generator is bought on hire-purchase. (2)

1.2

John's daughter joined the school's hockey team in 2022.

TABLE 1 below shows the school sport uniform she would need as well as the percentage (%) change in the price compared to the previous year.

**TABLE 1: PRICES OF SCHOOL SPORT UNIFORM WITH PERCENTAGE (%) CHANGE IN PRICE**

ITEM	2021 PRICE	2022 PRICE	% CHANGE IN PRICE
Sport shirt	R267,92	R265,00	– 1,1
Sport shorts	R214,17	R177,00	– 17,4
Sport skirt	R248,70	R232,00	– 6,7
Tracksuit top	R267,78	R382,00	42,7
Tracksuit pants	R87,75	R195,00	122,2
Sport socks	R48,58	R53,50	10,1
Cap	R89,95	R171,00	90,1

[Adapted from [www.news24.com/fin24/money/education](http://www.news24.com/fin24/money/education)]

Use TABLE 1 to answer the questions that follow.

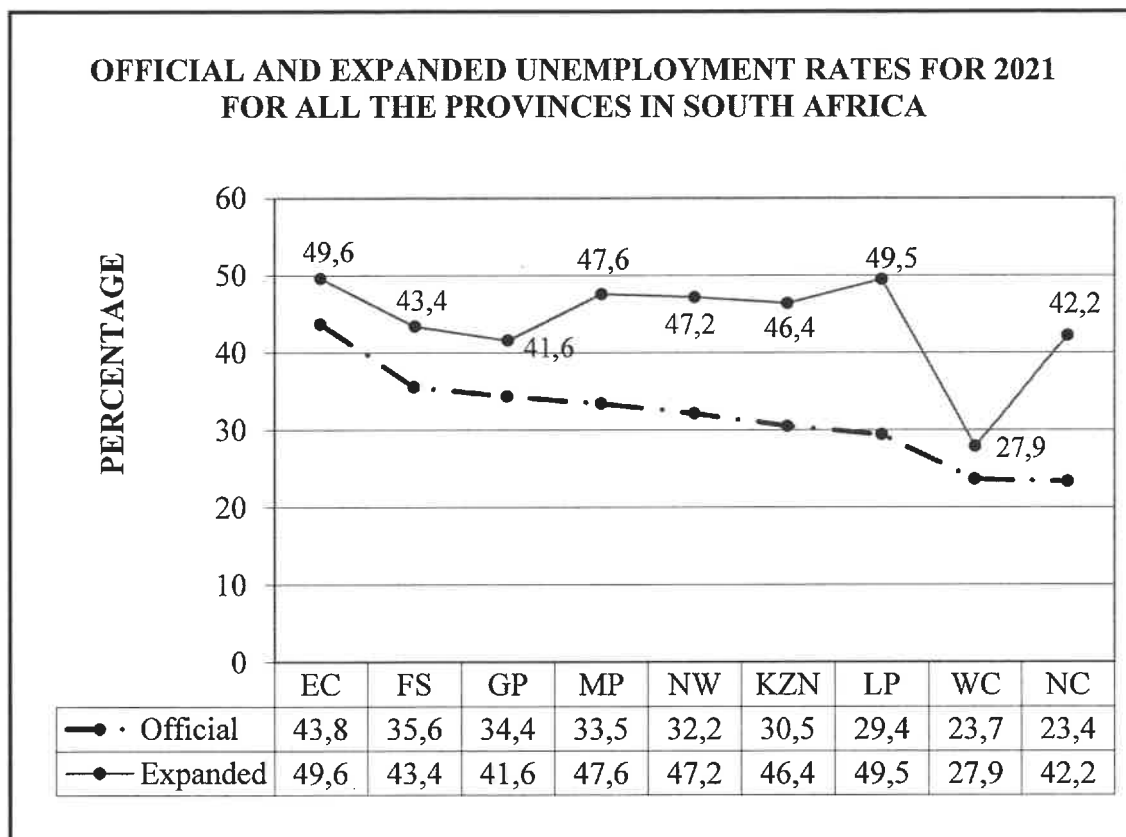
- 1.2.1 Arrange (in ascending order) the % change in price. (2)
- 1.2.2 Identify the third most expensive item in 2022. (2)
- 1.2.3 Calculate the difference in price of a cap bought in 2022 compared to 2021. (2)
- 1.2.4 Determine the total cost of the school sport uniform in 2021. (2)
- 1.2.5 Name ONE other item NOT listed in the table that John's daughter might need in order to play for the school hockey team. (2)

- 1.3 The line graph below shows the official and expanded unemployment rates for 2021 for all the provinces in South Africa.

**NOTE:**

The **expanded unemployment** rate includes the statistics of unemployed persons not looking for employment or trying to become self-employed.

The **total labour force** includes all those who are employable, including the unemployed.



Use the graph above to answer the questions that follow.

- 1.3.1 Write down the province with the:
- Highest expanded unemployment rate (2)
  - Smallest difference between the official unemployment rate and the expanded unemployment rate (2)
- 1.3.2 Determine which province represents the modal official unemployment rate. (2)
- 1.3.3 The total labour force for the Free State (FS) was 918 000 in 2021.
- Calculate the number of officially unemployed people in the Free State. (3)

[31]

**QUESTION 2**

2.1

Roadside Tours and Travel Agency made a booking at a guesthouse for 36 work colleagues to attend a conference in Upington.

The guesthouse offers rooms with 2 beds and 4 beds for accommodation.

ANNEXURE A shows an invoice that Roadside Tours and Travel Agency received from the guesthouse.

The total amount for accommodation and meals were paid for in advance.

Use ANNEXURE A and the information above to answer the questions that follow.

2.1.1 Write down the address of the guesthouse. (2)

2.1.2 The accommodation cost includes 15% VAT.

Determine (excluding VAT) the price for a person per night in a 2-bed room. (3)

2.1.3 Calculate the missing value C, the total for the 4-bed room. (2)

2.1.4 Determine (in simplified form) the ratio of the number of guests booked in the 2-bed rooms to the number of guests booked in the 4-bed rooms. (6)

2.1.5 Two work colleagues who booked the 2-bed rooms cancelled as follows:

One cancelled at 11:00, while the other one cancelled at 15:00 on the check-in date.

Their meal cost will be fully refunded, while the accommodation costs will be refunded according to the conditions of the cancellation policy stated in ANNEXURE A.


The tour operator stated that the refund would be less than R2 500.

Verify, showing ALL calculations, whether this statement is CORRECT. (7)

2.2

Niel owns a panel beating business. He specialises in buying accident-damaged cars which he refurbishes (repairs, repaints, valets) for resale.

Shown below are the different costs incurred to refurbish an accident-damaged 2019 model Renault Kwid bought for R50 000.

COST OF REFURBISHING THE CAR		PICTURE OF THE DAMAGED CAR
Cost of the panel beating and painting:	R22 000,00	
Cost of fixing minor engine faults:	R3 682,50	
Valet (deep cleaning of the vehicle):	R450,00	

[Source: [www.autosalvagecentre.co.za](http://www.autosalvagecentre.co.za)]

Use the information above to answer the questions that follow.

2.2.1 Calculate the total cost of buying and refurbishing the accident-damaged car. (2)

2.2.2 Niel normally sells the refurbished car at 65% of the cost price of a brand new similar model car.

The cost price of a brand new similar model car is R145 900.

Niel stated that he will make a profit of more than R20 000 when he sells the refurbished car.

Verify, showing ALL calculations, whether his statement is VALID. (5)

2.2.3 Niel invests R15 000 of his total profit in a bank which offers him the following interest rates:

6,25% interest compounded yearly for the first year and an interest rate of 6,95% compounded yearly for the second year.

Calculate the total interest that Niel's investment would earn at the end of the second year. (6)

[33]

**QUESTION 3**

3.1 TABLE 2 in ANNEXURE B shows the number of people employed at Motor Holdings (MH) in August 2020 and 2019.

In August 2020, the company had 41 motor dealerships and a head office.

Use TABLE 2 in ANNEXURE B to answer the questions that follow.

- 3.1.1 Write down the total number of semi-skilled workers employed by MH during August 2020. (2)
- 3.1.2 Determine the difference in the total number of employees from August 2019 to August 2020. (2)
- 3.1.3 Determine the number of staff with disabilities employed in 2020 as a percentage of all the employees in 2020. (3)
- 3.1.4 Calculate the average number of employees per dealership if 1,5% of the total number of employees worked at the head office in August 2020. (5)
- 3.1.5 Determine (as a percentage rounded off to THREE decimal places) the probability of randomly choosing a coloured female from the list of employees in August 2020. (3)

3.2 ANNEXURE C shows in percentages box and whisker plots of the unemployment rate for all the provinces in South Africa from 2019 to 2021.

Use ANNEXURE C to answer the questions that follow.

- 3.2.1 Determine the following:
- (a) Lower quartile for 2020 (2)
  - (b) 75<sup>th</sup> percentile for 2019 (2)
  - (c) Median for 2021 (2)
- 3.2.2 Give TWO reasons why it could be said that the unemployment rate was at its highest in 2021. (4)
- [25]**



**QUESTION 4**

4.1

Katlego is employed at a school by the Presidential Youth Employment Initiative (PYEI). He earns a salary of R4 000 per month.

He presently has a NEDBANK Pay-as-you-use Account but is thinking of changing to a CAPITEC Global One Account.

TABLE 3 below shows the transactional fees for the two banks.

**TABLE 3: TRANSACTIONAL FEES OF TWO BANKS**

TRANSACTION TYPE	BANK FEES	
	NEDBANK (Pay-as-you-use)	CAPITEC (Global One)
Deposits (ATM)	R1,30 per R100	R1,30 per R100
Deposits (Branch)	R80 + R2,30 per R100	R4,00 per R100
Cash withdrawals (own ATM)	R9,00 per R1 000 (or a part thereof)	R8 per R1 000 (or a part thereof)
Cash withdrawals (other ATM)	R11 + R2,30 per R100 (or a part thereof)	R10 per R1 000 (or a part thereof)
Cash withdrawals (branch)	R80 + R2,30 per R100	N/A
Debit order (internal)	Free	Free
Debit order (external)	R5,00	R1,50
Send cash (R1–R1 000)	R10,00	R8,00
Send cash (R1 001–R5 000)	R15,00	R16,00
Airtime/Data/Electricity (own ATM)	R1,50	R0,50
Airtime/Data/Electricity (other ATM)	R10,00	R8,00

[Adapted from [nedbank.co.za](http://nedbank.co.za) and [capitec.co.za](http://capitec.co.za)]

Use TABLE 3 and the above information to answer the questions that follow.

4.1.1 Give ONE reason why banks charge more for branch deposits than ATM deposits. (2)

4.1.2 Determine the difference in cost of an external debit order using a Nedbank Pay-as-you-use account and a Capitec Global One account. (2)

4.1.3 Katlego had the following monthly transactions on his bank statement:

- Two external debit orders
- One cash withdrawal of R1 500 at own bank ATM
- One cash withdrawal of R450 at another bank ATM
- One Send cash transaction of R1 500 to his mother

The CAPITEC banking fees for the listed transactions are R45,00.

Katlego states that he would have saved R20,50 on bank fees if he banked with CAPITEC rather than NEDBANK.

Verify, showing ALL calculations, whether Katlego's statement is VALID. (7)

4.2

Katlego (who is 24 years old) has two jobs: one at the PYEI and the other at a retail store.

He earned a combined annual taxable income of R87 329 for the 2021/2022 tax year.

TABLE 4 shows the personal income tax rates, tax rebates and tax thresholds for 2021/2022.

**TABLE 4: PERSONAL INCOME TAX RATES, TAX REBATES AND TAX THRESHOLDS FOR 2021/2022**

**TAX RATES 2021/2022**

TAXABLE INCOME (R)	RATES OF TAX (R)
R0–R216 200	18% of each R1
R216 201–R337 800	R38 916 + 26% of the amount above R216 200
R337 801–R467 500	R70 532 + 31% of the amount above R337 800
R467 501–R613 600	R110 739 + 36% of the amount above R467 500

**TAX REBATES 2021/2022**

Primary (below 65)	R15 714
Secondary (65 and older)	R8 613
Tertiary (75 and older)	R2 871

**TAX THRESHOLDS 2021/2022**

Below age 65	R87 300
Age 65 to age 74	R135 150
Age 75 and older	R151 100

[Adapted from [www.sars.za](http://www.sars.za)]

Use TABLE 4 and the information above to answer the questions that follow.

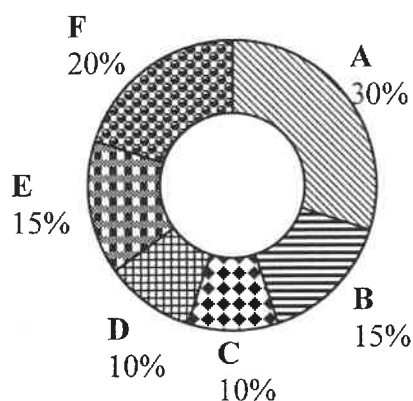
- 4.2.1 Calculate Katlego's annual tax payable for the 2021/2022 tax year. (4)
- 4.2.2 Define the term *tax rebate*. (2)
- 4.2.3 Show that the tax threshold for age 65 to age 74 in the table is CORRECT. (5)

4.3

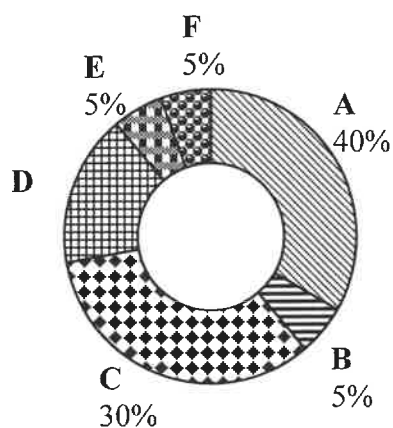
Katlego moved into a rented flat.

Below are two pie charts showing a comparison of his monthly budget with his parents' combined monthly budget.

**Katlego's parents' combined monthly budget (income R29 300)**



**Katlego's monthly budget (income R7 000)**



**Key for the pie charts:**

A	Food and electricity
B	Insurance
C	Clothing and personal care
D	Communication (cellphone and data)
E	Savings
F	Other

Study the pie charts above and answer the questions that follow.

- 4.3.1 Name ONE other type of graph that could be used to display the data above. (2)
- 4.3.2 Calculate the missing value **D** in Katleho's monthly budget. (2)
- 4.3.3 Determine (as a decimal) the probability of randomly choosing an item in the parents' budget which is NOT savings. (3)
- [29]

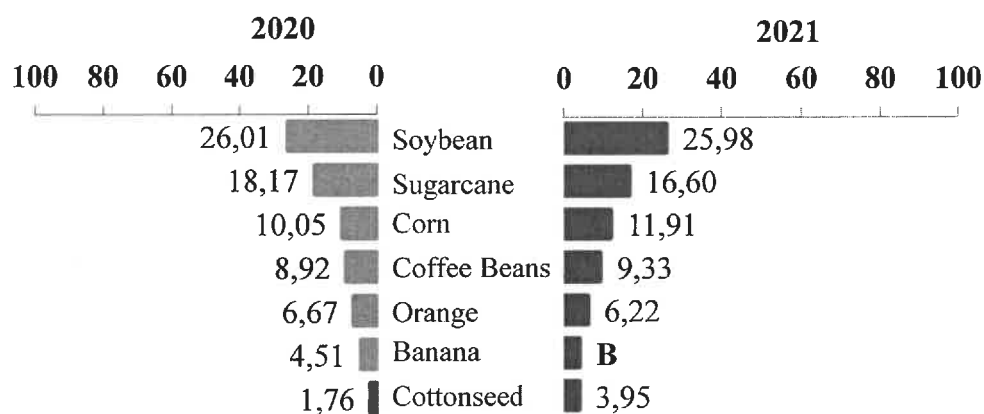
## QUESTION 5

5.1

The graph below shows the percentage of the gross value of production of the main agricultural products in Brazil. One value (**B**) was omitted.

The total gross value for 2020 was US\$110 322 million.

**PERCENTAGE OF THE GROSS VALUE OF PRODUCTION OF THE  
MAIN AGRICULTURAL PRODUCTS IN BRAZIL**



[Adapted from IBGE – Systematic Survey of Agricultural Production]

Use the graph above and the information to answer the questions that follow.

- 5.1.1 The percentage gross value of production of bananas decreased from 2020 to 2021.

Identify the agricultural product that had the largest increase from 2020 to 2021.

(2)

- 5.1.2 Determine the total amount (in US\$) that coffee contributed in 2020.

(3)

- 5.1.3 Determine the probability of randomly choosing potatoes as an agricultural product from the data above.

(2)

- 5.1.4 The gross value for the production of soybeans was US\$32 201 billion in 2021.

Determine (in billions) the amount for the production of corn in 2021.

(5)

- 5.1.5 The average percentage contribution for the seven agricultural products was 11,15% in 2021.

Determine the percentage contribution of bananas (**B**) in 2021.

(5)

- 5.1.6 The projected total gross value for 2022 was one hundred and eighteen billion, four hundred and five million US dollars.

Write down this value using numerals (numbers).

(2)

5.2

Brazil has trade relationships with a number of countries.

TABLE 5 below shows the value (in billions of US\$) of imports and exports for Brazil with six countries.

**TABLE 5: THE VALUE (IN BILLIONS OF US\$) OF IMPORTS AND EXPORTS FOR BRAZIL WITH SIX COUNTRIES**

COUNTRY	IMPORTS (Billions of US\$)	EXPORTS (Billions of US\$)
China	36,74	67,79
United States of America	29,72	21,62
Germany	9,68	4,12
Argentina	8,22	8,49
South Korea	4,66	3,76
Japan	4,32	4,13

TABLE 6 below indicates the exchange rates on 27 April 2022.

**TABLE 6: CURRENCY CONVERSION FACTORS**

CURRENCY	EXCHANGE RATES
US dollar (US\$) to Brazilian real (BRL)	US\$1 = BRL4,9642
Brazilian real (BRL) to South African rand (ZAR)	1BRL = R3,2026
Euro (€) to Brazilian real (BRL)	€1 = BRL5,2379

[Adapted from [www.xe.com](http://www.xe.com)]

Use TABLE 5 and TABLE 6 above to answer the questions that follow.

- 5.2.1 State the country with the smallest range between the imports and exports to Brazil. (2)
- 5.2.2 Identify the weakest currency against the Brazilian real. (2)
- 5.2.3 Calculate the exchange rate between the euro and the South African rand in the form €1 = R... (3)
- 5.2.4 Ludwig, a German citizen, stated that the difference between the United States imports and exports to Brazil is more than 7 600 million euros. (6)
- Verify, showing ALL calculations, whether Ludwig's statement is VALID. [32]

**TOTAL: 150**



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

**MATHEMATICAL LITERACY P1/WISKUNDIGE GELETTERDHEID V1**

**2023**

**MARKING GUIDELINES/NASIENRIGLYNE**

**MARKS/PUNTE: 150**

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

**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.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake he loses one mark.
- A conclusion mark can only be given if relevant calculations precedes it.

**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 egter 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.
- Afronding tel as 'n afsonderlike punt.
- Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.
- 'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.

QUESTION/VRAAG 1 [31 MARKS/PUNTE] ANSWER ONLY FULL MARKS			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
* 1.1.1	$\checkmark A$ $\checkmark A$ Hire-purchase / online credit (Mobicred) / Cash price.  <b>OR/OF</b>  <i>Huurkoop / aanlyn krediet (Mobicred) / Kontant prys.</i> (Any two/Enige twee)	1A first method 1A second method  (2)	F L1
* 1.1.2	You buy the generator at a monthly installment. Only after your final installment you own the generator. <i>Jy koop die generator teen 'n maandelikse paaieiment.</i> <i>Slegs na die laaste paaieiment het jy die generator <math>\checkmark\checkmark A</math> gekoop.</i>	2A correct explanation  (2)	F L1
1.1.3	14,75% $\checkmark\checkmark RT$	2RT correct percentage (2)	F L1
1.1.4	Total cost / totale koste $\checkmark MA$ $R1\ 006 \times 12$ $= R12\ 072$ $\checkmark A$	1MA multiply by 12 1A simplification (2)	F L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.5	Discount / <i>afslag</i> $= R10\,999 \times \frac{12,5}{100} \checkmark \text{MA}$ $= R1\,374,88 \checkmark \text{A}$	1MA calculating 12,5% 1A amount discount <div style="border: 1px solid black; padding: 2px;">Accept: R1 374,90 <b>OR</b> R1 375</div> (2)	F L1
1.1.6	Simple Interest / <i>Enkelvoudige rente</i> $\checkmark \checkmark \text{A}$	2A simple interest (2)	F L1
* 1.2.1	Ascending order / <i>Stygende orde</i> $\checkmark \text{RT}$ -17,4%; - 6,7%; - 1,1%; 10,1%; 42,7%; 90,1%; 122,2% $\checkmark \text{A}$	1RT correct values 1A ascending order (2)	D L1
* 1.2.2	Sport skirt / <i>Sport rompie</i> $\checkmark \checkmark \text{RT}$	2RT correct item (2)	D L1
1.2.3	Difference / <i>Verskil</i> $= R171,00 - R89,95 \checkmark \text{MA}$ $= R81,05 \checkmark \text{A}$	1MA subtracting correct values 1A difference (2)	F L1
1.2.4	Total cost / <i>totale koste</i> $= R267,92 + R214,17 + R248,70 + R267,78$ $+ R87,75 + R48,58 + R89,95 \checkmark \text{MA}$ $= R1\,224,85 \checkmark \text{CA}$	1MA adding correct values 1CA simplification <div style="border: 1px solid black; padding: 2px;">CA only if 1 value omitted</div> (2)	F L1
* 1.2.5	Shinpads / <i>Skeenskud</i>  <b>OR/OF</b> $\checkmark \checkmark \text{A}$  Hockey shoes / <i>Hokkieskoene</i> . <i>(Any hockey related equipment)</i>	2A correct item   (2)	D L1



Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
* 1.3.1 (a)	EC / OK ✓✓RT	2RT correct province (2)	D L1
* 1.3.1 (b)	WC / WK ✓✓RT	2RT correct province (2)	D L1
1.3.2	No province / <i>Geen provinsie</i>  <b>OR/OF</b> ✓✓A  No Mode / <i>Geen Modus</i>	2A correct solution (2)	D L1
* 1.3.3	Number of unemployed people / <i>Aantal werklose mense</i>  ✓RT = 35,6% × 918 000 ✓MA  = 326 808 ✓CA	1RT correct %  1MA calculating percentage  1CA simplification (3)	D L1
		<b>[31]</b>	

QUESTION/VRAAG 2 [33 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
* 2.1.1	125 Bossie Street, Uppington ✓✓RT	2RT correct address (2)	F L1
2.1.2	<p>Excluding VAT / <i>BTW uitgesluit</i></p> <p>✓RT  <math>= R900 \times \frac{100}{115}</math> ✓MA  <math>= R782,6086957</math>  <math>= R782,61</math> ✓A</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>✓RT  <math>= \frac{R900}{1,15}</math> ✓MA  <math>= R782,6086957</math>  <math>= R782,61</math> ✓A</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>VAT / <i>BTW</i>  ✓RT  <math>= R900 \times (15 \div 115)</math>  <math>= R117,39</math> ✓A</p> <p>Excluding VAT / <i>BTW uitgesluit</i></p> <p><math>= R900 - R117,39</math>  <math>= R782,61</math> ✓A</p>	<p>1RT correct accommodation 1MA excluding calculation</p> <p>1A simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1RT correct accommodation 1MA excluding calculation</p> <p>1A simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1RT correct accommodation</p> <p>1A vat amount</p> <p>1A simplification (3)</p>	F L2
2.1.3	<p style="text-align: right;">✓MA</p> <p><b>C</b> = R75 040,00 – (R28 800+ R5 760 + R6 480)  = R34 000 ✓CA</p> <p style="text-align: center;"><b>OR / OF</b></p> <p><b>C</b> = R850 × 2 × 20 ✓MA  = R34 000 ✓CA</p>	<p>1MA correct values used 1CA simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1MA multiply correct values 1CA simplification (2)</p>	F L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
* 2.1.4	<p>Number of guests in 4-bed rooms / <i>Aantal gaste in 'n 4-bed-kamers</i></p> <p><math>= R34\ 000 \div (2 \times 850)</math> ✓MCA  <math>= 20</math> ✓CA</p> <p>Number of guests in 2-bed rooms <i>Aantal gaste in 'n 2-bed-kamers</i></p> <p><math>= R28\ 800 \div (2 \times 900)</math> ✓MCA  <math>= 16</math> ✓CA</p> <p>Ratio/<i>Verhouding</i> <math>= 16 : 20</math> ✓MCA  <math>= 4 : 5</math> ✓CA</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>Number of guests in 2-bed rooms <i>Aantal gaste in 'n 2-bed-kamers</i></p> <p><math>= R28\ 800 \div (2 \times 900)</math> ✓MA  <math>= 16</math> ✓CA</p> <p>Number of guest in 4-bed rooms <i>Aantal gaste in 'n 4-bed-kamers</i>  ✓MCA  <math>= 36 - 16 = 20</math> ✓CA</p> <p>Ratio/<i>Verhouding</i> <math>= 16 : 20</math> ✓MCA  <math>= 4 : 5</math> ✓CA</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>✓MA      ✓MA  <math>= \frac{R28\ 800}{900} : \frac{R34\ 000}{850}</math> ✓MA</p> <p>Ratio/<i>Verhouding</i> <math>= 32 : 40</math> ✓A ✓MCA  <math>= 4 : 5</math> ✓CA</p>	<p><b>CA from Question 2.1.3</b></p> <p>1MCA dividing and multiplying 1CA simplification</p> <p>1MCA dividing and multiplying 1CA number of guest in 2-bed accommodation</p> <p>1MCA ratio in correct order 1CA simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1MA dividing and multiplying 1CA simplification</p> <p>1MCA subtracting 1CA number of guest in 2-bed accommodation 1MCA ratio in correct order 1CA simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1MA left ratio 1MA right ratio 1MA concept of ratio 1A correct value 1MCA ratio in correct order 1CA simplification</p> <p style="text-align: right;">(6)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.5	<p>Cost of one guest in 2-bed room/ <i>Koste van een gas in 'n 2-bed-kamer</i>  <math>= 2 \times R900</math>  <math>= R1\ 800 \quad \checkmark A</math></p> <p>Refund for cancelling before check-in time/ <i>Terugbetaling vir kanselasie voor inteken tyd</i>  <math>= \frac{75}{100} \times R1\ 800 \quad \checkmark MCA</math>  <math>= R1\ 350 \quad \checkmark CA</math></p> <p>Refund for cancelling after check-in time/ <i>Terugbetaling vir kanselasie na inteken tyd</i>  <math>\frac{25}{100} \times R1\ 800</math>  <math>= R450 \quad \checkmark CA</math></p> <p>Refund for meals/<i>Terugbetaling vir etes</i>  <math>= 4 \times R80 + 4 \times R90</math>  <math>= R680 \quad \checkmark A</math></p> <p>Total Refund/ <i>Totale Terugbetaling</i>  <math>= R450 + R1\ 350 + R680</math>  <math>= R2\ 480 \quad \checkmark CA</math></p> <p>Statement is CORRECT/<i>Stelling is KORREK</i> <math>\checkmark O</math></p> <p style="text-align: center;"><b>OR / OF</b></p>	<p>1A total accommodation</p> <p>1MCA calculating 75%</p> <p>1CA simplification</p> <p>1CA second accommodation refund</p> <p>1A meal refund</p> <p>1CA total refund</p> <p>1O conclusion</p> <p style="text-align: center;"><b>OR / OF</b></p>	<p>F L4</p>

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.1.5	<p>First Person / <i>Eerste persoon</i>  Total cost of room / <i>Totale koste van kamer</i>  <math>= 2 \times R900</math>  <math>= R1\ 800</math> ✓A</p> <p>Refund for accommodation / <i>Terugbetaling van akkomodasie</i>  <math>= R1\ 800 \times 25\%</math>  <math>= R450</math> ✓MCA</p> <p>Total refund / <i>Totale terugbetaling</i>  <math>= R450 + 2 (R80,00 + R90)</math>  <math>= R790</math> ✓CA</p> <p>Second Person / <i>Tweede Persoon</i>  Total cost of room / <i>Totale koste van kamer</i>  <math>= 2 \times R900</math>  <math>= R1\ 800</math></p> <p>Refund for accommodation / <i>Terugbetaling vir akkomodasie</i>  <math>= R1\ 800 \times 75\%</math>  <math>= R1\ 350</math></p> <p>Total refund / <i>Totale terugbetaling</i>  <math>= R1\ 350 + 2 (R80,00 + R90)</math> ✓A  <math>= R1\ 690</math> ✓CA</p> <p>Total refund for both people / <i>Totale terugbetaling vir beide persone</i>  <math>= R1\ 690 + R790 = R2\ 480</math> ✓CA</p> <p>Statement is CORRECT / <i>Stelling is KORREK.</i> ✓O</p>	<p>1A total accommodation</p> <p>1MCA calculating 25%</p> <p>1CA simplification</p> <p>1A total meals 1CA total refund</p> <p>1CA total refund for 2 people</p> <p>1O conclusion</p>	(7)
* 2.2.1	<p>Cost to fix the vehicle / <i>Koste om voertuig reg te maak</i></p> <p><math>= R50\ 000 + R22\ 000 + R3\ 682,50 + R450</math> ✓MA  <math>= R76\ 132,50</math> ✓CA</p>	<p>1MA adding all values 1CA correct answer <b>AO</b></p>	(2)
			F L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.2.2	<p>Selling price / <i>verkoopprys</i></p> $= \frac{65}{100} \times R145\,900 \checkmark MA$ $= R94\,835 \checkmark A$ $= R94\,835 - R76\,132,50 \checkmark MCA$ $= R18\,702,50 \checkmark CA$ <p>Not VALID / <i>Nie GELDIG nie</i> <math>\checkmark O</math></p>	<p><b>CA from Question 2.2.1</b></p> <p>1MA percentage calculation</p> <p>1A correct answer</p> <p>1MCA subtracting values</p> <p>1CA simplification</p> <p>1O conclusion</p> <p>(5)</p>	F L4
2.2.3	<p>Interest / <i>rente</i></p> $= R15\,000 \times 6,25\%$ $= R937,50 \checkmark A$ <p>Amount after one year / <i>bedrag na een jaar</i></p> $= R15\,000 + R937,50 \checkmark MA$ $= R15\,937,50 \checkmark CA$ <p>Interest for second year/ <i>rente vir tweede jaar</i></p> $= R15\,937,50 \times 6,95\%$ $= R1\,107,66 \checkmark CA$ <p>Amount after two years / <i>bedrag na twee jaar</i></p> $= R15\,937,50 + R1\,107,66$ $= R17\,045,16$ <p>Interest after two years / <i>rente na twee jaar</i></p> $= R17\,045,16 - R15\,000 \checkmark MCA$ $= R2\,045,16 \checkmark CA$ <p style="text-align: center;"><b>OR / OF</b></p> <p>Interest / <i>rente</i></p> $= R15\,000 \times 6,25\% = R937,50 \checkmark A$ <p>Amount after one year / <i>bedrag na een jaar</i></p> $= R15\,000 + R937,50 \checkmark MA$ $= R15\,937,50 \checkmark CA$ <p>Interest for second year / <i>rente vir tweede jaar</i></p> $= R15\,937,50 \times 6,95\%$ $= R1\,107,66 \checkmark CA$ <p>Interest after two years / <i>rente na twee jaar</i></p> $= R937,50 + R1\,107,66 \checkmark MCA$ $= R2\,045,16 \checkmark CA$ <p style="text-align: center;"><b>OR / OF</b></p>	<p>1A interest</p> <p>1MA adding interest</p> <p>1CA Simplification</p> <p>1CA simplification</p> <p>1MCA subtracting values</p> <p>1CA simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1A interest</p> <p>1MA adding interest</p> <p>1CA Simplification</p> <p>1CA simplification</p> <p>1MCA adding values</p> <p>1CA simplification</p> <p style="text-align: center;"><b>OR / OF</b></p>	F L3

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.2.3	<p>Amount after two years / <i>bedrag na twee jaar</i></p> <p style="text-align: center;">✓MA    ✓MA</p> $= R15\,000 \times 1,0625 \times 1,0695 \quad \checkmark\text{MA}$ $= R17\,045,16 \quad \checkmark\text{CA}$ <p>Interest after two years / <i>rente na twee jaar</i></p> $= R17\,045,16 - R15\,000 \quad \checkmark\text{MCA}$ $= R2\,045,16 \quad \checkmark\text{CA}$	<p>1MA adding percentage year 1  1MA adding percentage year 2  1MA multiplying year 1 &amp; 2  1CA simplification</p> <p>1MCA subtracting values  1CA simplification</p> <p style="text-align: right;">(6)</p>	
		<b>[33]</b>	

<b>QUESTION/VRAAG 3 [25 MARKS/PUNTE]</b>			
<b>Q/V</b>	<b>Solution/Oplossing</b>	<b>Explanation/Verduideliking</b>	<b>T&amp;L</b>
3.1.1	537 ✓✓RT	2RT correct value (2)	D L1
* 3.1.2	✓RT Difference/Verskil = 2 163 – 2 828 = – 665 ✓CA	1RT correct values chosen 1CA simplification (2)	D L1
3.1.3	% employees with disabilities / werkers met gestremdhede ✓RT $= \frac{34}{2\,163} \times 100\%$ ✓MCA = 1,572% ✓CA	<b>CA from Question 3.1.2</b>  1RT correct values chosen 1MCA calculate %  1CA simplification <div style="border: 1px solid black; padding: 2px;">Accept: 1,6% and 1,57%</div> (3)	D L2
3.1.4	% employees at head-office/ % werkers by hoofkantoor  = 1,5% × 2 163 = 32,445 ✓A  Number of employees in motor dealerships <i>Aantal werkers in motorhandelaar</i>  = 2 163 – 32,445 ✓MCA = 2 130,555 ✓CA  Average per dealership/gemiddelde per motorhandelaar  = 2 130,555 ÷ 41 ✓MCA = 51,9647... ✓CA  <b>OR / OF</b>  % employees at head-office/ % werkers by hoofkantoor  = 100% – 1,5% = 98,5% ✓A	<b>CA from Question 3.1.2</b>  1A employees at head office   1MCA subtracting 1CA employees at branches   1MCA average concept 1CA simplification  <b>OR / OF</b>  1A employees at head office	D L3



Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.1.4	<p>Number of employees in motor dealerships <i>Aantal werkers in motorhandelaar</i></p> <p><math>= 98,5\% \times 2\,163</math> ✓MCA <math>= 2\,130,555</math> ✓CA</p> <p>Average per dealership/<i>gemiddelde per motorhandelaar</i> <math>= 2\,130,555 \div 41</math> ✓MCA <math>= 51,9647</math> ✓CA</p>	<p>1MCA multiplying 1CA employees at branches</p> <p>1MCA average concept 1CA simplification <b>NPR</b></p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">Accept: 51,96 / 51,97 / 52 / 51</div> <p style="text-align: right;">(5)</p>	
3.1.5	<p>% coloured females / % <i>bruin vroue</i> ✓RT</p> <p><math>= \frac{54}{2\,163} \times 100\%</math> ✓MA</p> <p><math>= 2,497\%</math> ✓R</p>	<p><b>CA from Question 3.1.2</b></p> <p>1RT correct values</p> <p>1MA probability concept</p> <p>1R rounded answer</p> <p style="text-align: right;">(3)</p>	P L2
3.2.1 (a)	<p>Lower Quartile / <i>Onderste kwartiel</i> = 21 ✓✓RT</p>	<p>2RT finding correct value</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">Accept: above 20 – less than 22</div> <p style="text-align: right;">(2)</p>	D L2
3.2.1 (b)	<p>75<sup>th</sup> percentile / <i>75ste persentiel</i> = 28,2 ✓✓RT</p>	<p>2RT finding correct value</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">Accept: above 28 – 29</div> <p style="text-align: right;">(2)</p>	D L2
3.2.1 (c)	<p>Median / <i>Mediaan</i> = 31,5 ✓✓RT</p>	<p>2RT finding correct value</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">Accept: 30,5 – 32,5</div> <p style="text-align: right;">(2)</p>	D L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.2.2	<p>50% of all the provinces had an unemployment rate of higher than 31,75% / ✓✓O  <i>50% van al die provinsies het 'n werkloosheidkoers van hoër as 31,75%</i></p> <p><b>OR / OF</b></p> <p>The median of the data is the highest in 2021. ✓✓O  <i>Die mediaan van die data is die hoogste in 2021.</i></p> <p><b>OR / OF</b></p> <p>The maximum value is the highest in 2021. ✓✓O  <i>Die maksimum waarde is die hoogste in 2021.</i></p> <p><b>OR / OF</b></p> <p>The box and whisker indicates a higher unemployment rate / <i>Die mond-en-snordiagram dui 'n hoër werkloosheidskoers aan.</i> ✓✓O</p> <p><b>OR / OF</b></p> <p>Q3 is higher in 2021 than in 2020 and 2019. ✓✓O  <i>K3 is hoër in 2021 as in 2020 en 2019.</i></p> <p>(Any two reasons / <i>Enige 2 redes</i>)</p>	<p>20 first explanation</p> <p>20 second explanation</p> <p>(4)</p>	D L4
		[25]	

QUESTION/VRAAG 4 [29 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.1	<p>Banks are discouraging clients to go to the branch to reduce the number of people visiting the bank /  <i>Banke ontmoeding kliente om binne die bank transakies te doen om die aantal mense binne die bank te verminder.</i> ✓✓A</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>Banks have to pay employees working in the bank /  <i>Banke moet werkers betaal om in die bank te werk.</i> ✓✓A</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>To reduce the wage bill /  <i>Om die loonrekening te verminder.</i> ✓✓A</p>	<p>2A explanation</p> <p style="text-align: right;">(2)</p>	F L4
4.1.2	<p>Difference in cost / <i>Verskil in koste</i></p> <p>= R5,00 – R1,50 ✓RT          = R3,50 ✓A</p>	<p>1RT correct values          1A simplification</p> <p style="text-align: right;">(2)</p>	F L2
4.1.3	<p>Nedbank: Pay-as-you-use / <i>Betaal-soos-jy-gebruik</i></p> <p>Transaction cost / <i>Transaksiekoste</i>          ✓A                      ✓A                      ✓SF                      ✓A          = <math>2 \times R5,00 + 2 \times R9,00 + R11 + 5 \times R2,30 + R15</math>          = R65,50 ✓CA</p> <p>Difference / <i>Verskil</i>          = R65,50 – R45,00          = R20,50 ✓CA</p> <p>His statement is VALID / <i>Sy bewering is GELDIG.</i> ✓O</p>	<p>1A debit order fees          1A cash withdrawal own ATM          1SF correct formula          1A cash send cost</p> <p>1CA simplification</p> <p>1CA subtracting</p> <p>1O valid</p> <p style="text-align: right;">(7)</p>	F L4

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
* 4.2.1	<p>Annual tax payable before primary rebate/  <i>Jaarlikse belasting betaalbaar voor primêre korting</i>  <math>= R87\,329 \times 18\%</math> ✓MA  <math>= R15\,719,22</math> ✓CA</p> <p>Annual tax payable after primary rebate/  <i>Jaarlikse belasting betaalbaar na primêre korting</i>  <math>= R15\,719,22 - R15\,714</math> ✓MCA  <math>= R5,22</math> ✓CA</p>	<p>1MA correct tax bracket  1CA simplification</p> <p>1MCA subtracting primary rebate  1CA simplification</p> <p>(4)</p>	F L3
4.2.2	<p>The discount SARS gives to tax payers /  <i>Die korting wat SARS vir belasting betalers gee.</i></p> <p style="text-align: center;"><b>OR / OF</b></p> <p style="text-align: right;">✓✓O</p> <p>Rebate is a tax relief given to tax payers /  <i>Korting is die belasting verligting wat aan belasting betalers gegee word.</i></p>	<p>2O tax discount</p> <p>(2)</p>	F L1
4.2.3	<p>✓RT      ✓RT  <math>R15\,714 + R8\,613</math> ✓MA  <math>= R24\,327</math> ✓MCA  <math>R24\,327 \div 18\%</math> ✓MCA  <math>= R135\,150</math></p> <p style="text-align: center;"><b>OR / OF</b></p> <p><math>= R135\,150 \times 18\%</math> ✓MA  <math>= R24\,327</math> ✓MCA</p> <p style="text-align: right;">✓RT      ✓RT</p> <p><math>= R24\,327 - (R15\,714 + R8\,613)</math> ✓MA  <math>= R0</math></p>	<p>1RT correct value  1RT correct value  1MA adding correct values  1MCA simplification</p> <p>1MCA dividing by 18%</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1MA calculating 18%  1MCA simplification  1RT correct value  1RT correct value  1MA subtracting correct values</p> <p>(5)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
* 4.3.1	Compound / dual / multiple / stacked bar graph <i>Saamgestelde/dubbel / veelvoudige / gestapelde</i> ✓✓A <i>staafgrafiek</i>  <b>OR / OF</b>  Line Graph / <i>Lyngrafiek</i> ✓✓A	2A graph          (2)	D L1
4.3.2	$D = 100\% - (40\% + 5\% + 30\% + 5\% + 5\%)$ ✓MA $= 15\%$ ✓CA	1MA subtracting from 100% 1CA simplification  (2)	D L1
4.3.3	$P_{\text{(not savings)}} = 100\% - 15\%$ ✓RT $= 85\%$ ✓CA $= 0,85$ ✓C  <b>OR / OF</b>  $P_{\text{(not savings)}} = 30\% + 15\% + 10\% + 10\% + 20\%$ ✓RT $= 85\%$ ✓CA $= 0,85$ ✓C	1RT correct percentages 1CA simplification 1C converting to decimal  <b>OR / OF</b>  1RT correct percentages 1CA simplification 1C converting to decimal  (3)	P L2
		[29]	

*Please turn over/Blaai om asseblief*

Q/V	Solution/Opplossing	Explanation/Verduideliking	T&L
5.1.4	<p>✓RT 25,98% = 32 201 billion / miljard</p> <p>Total amount / totale bedrag</p> <p>✓RT      ✓MCA  <math>11,91\% = \frac{11,91}{25,98} \times \\$32\,201 \text{ billion / miljard}</math> ✓MA  = \$14 761,890300 billion / miljard ✓CA</p>	<p>1RT correct percentage</p> <p>1RT correct percentage 1MCA correct ratio 1MA calculating total amount</p> <p>1CA simplification (5)</p>	
5.1.5	<p>% contribution of bananas / % bydrae van piesangs</p> $11,15 = \frac{25,98+16,60+11,91+9,33+6,22+B+3,95}{7} \quad \checkmark \text{MA}$ <p>✓MA  <math>11,15 = \frac{73,99+B}{7}</math></p> <p>78,05 = 73,99 + B ✓S  B = 78,05 – 73,99 ✓MCA</p> <p>B = 4,06 ✓CA</p> <p style="text-align: center;"><b>OR / OF</b></p> <p style="text-align: right;">✓MA</p> $25,98 + 16,60 + 11,91 + 9,33 + 6,22 + B + 3,95 = 11,15 \times 7$ <p>✓MA  73,99 + B = 78,05 ✓S</p> <p style="text-align: center;">B = 78,05 – 73,99 ✓MCA</p> <p style="text-align: center;">B = 4,06 ✓CA</p>	<p>1MA concept of mean</p> <p>1MA adding values – 73,99</p> <p>1S simplification 1MCA changing the subject</p> <p>1CA simplification</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>1MA concept of mean 1MA adding values – 73,99 1S simplification</p> <p>1MCA changing the subject</p> <p>1CA simplification (5)</p>	D L3
5.1.6	118 405 000 000 US\$/VS\$.    ✓✓A	2A correct number (2)	D L1
5.2.1	Japan    ✓✓RT	2RT correct country (2)	F L2
* 5.2.2	ZAR <b>OR/OF</b> South African Rand / Suid Afrikaanse Rand <b>OR/OF</b> Rand    ✓✓RT	2RT correct currency (2)	F L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.2.3	$\text{€ } 1 = \text{BRL } 5,2379 \checkmark \text{RT}$ $= 5,2379 \times \text{R}3,2026 \checkmark \text{MCA}$ $= \text{R}16,77489 / \text{R}16,7749 / \text{R}16,77 / \text{R}16,775 \checkmark \text{CA}$	1RT correct rate 1MCA multiplying correct values 1CA simplification <b>NPR</b> ( <i>min 2 decimal places</i> ) <b>AO</b> (3)	F L2
5.2.4	Difference / <i>Verskil</i> (in US\$/VS\$) $\checkmark \text{A}$ $= 29,72 \text{ billion/miljard} - 21,62 \text{ billion/miljard}$ $= 8,1 \text{ billion / miljard} \checkmark \text{CA}$  Difference / <i>Verskil</i> (in BRL) $= 8,1 \text{ billion/miljard} \times 4,9642 \checkmark \text{MCA}$ $= 40,21002 \text{ billion / miljard} \checkmark \text{CA}$  Difference / <i>Verskil</i> (in €) $= 40,21002 \div 5,2379$ $= 7,676744497 \text{ billion / miljard}$ $= 7\,676,744497 \text{ million / miljoen} \checkmark \text{CA}$  His statement is <b>VALID</b> / <i>Sy bewering is GELDIG.</i> $\checkmark \text{O}$	1A difference in US\$ 1CA simplification  1MCA multiplying by correct exchange rate 1CA simplification  1CA answer in millions 1O conclusion <b>NPR</b> (6) [32]	F L4
		<b>TOTAL/TOTAAL: 150</b>	