basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

NOVEMBER 2022

MARKS: 150

TIME: 3 hours

This question paper consists of 13 pages and an addendum with 2 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 4.2
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 Martha needs to buy school uniforms for her son and daughter. She compares the prices of three different stores as shown in TABLE 1 below.

TABLE 1: COST OF SCHOOL UNIFORMS AT THREE DIFFERENT STORES

ITEMS	STORE A	STORE B	STORE C
White shirt	R110,00 for 2	R44,99 each	R110,00 for 2
Grey skirt	R163,00 for 2	R54,99 each	R130,00
Grey shorts	R186,00	R39,99	R99,95
Grey school socks	R40,50 for 2 packs	R18,99 per pack	R89,99 for 3 packs
White school socks	R85,00 for 5 packs	R11,99 per pack	R85,99 for 5 packs
School shoes (girls)	R349,00	R159,99	R170,00
School shoes (boys)	R318,00	R169,99	R275,00
TOTAL	**P**	---	---

[Adapted from www.news24.com/fin24/money/education]

NOTE:
There are two pairs of socks in each pack.

Use TABLE 1 above to answer the questions that follow.

1.1.1 Identify whether the prices given in TABLE 1 are numerical or categorical data. (2)

1.1.2 Arrange, in ascending order, all the prices given for Store B. (2)

1.1.3 Name the store that sells the cheapest grey shorts. (2)

1.1.4 Calculate the price for a pack of white school socks at Store C. (3)

1.1.5 Determine the missing value **P**, if Martha bought all the school items as advertised at Store A. (2)

1.1.6 The probability of selecting Store C to buy all the school items is 0,3333333333.

(a) Define the term *probability* in the given context. (2)

(b) Write down this probability as a percentage rounded to the nearest whole number. (2)

1.2 One of the many investment options in South Africa is the stokvel option. TABLE 2 below shows two stokvel plans (Plan A and Plan B) over a 24-month period.

TABLE 2: TWO STOKVEL PLANS

UNITED AFRICAN STOKVEL

PLAN A (MONTHLY FIXED TERM PLAN)	PLAN B (ONCE-OFF SAVING PLAN)
Choose how long you want to save for.	Choose how long you want to save for.
Saving period: **24 months**	Saving period: **24 months**
How much do you want to save **monthly?**	How much do you want to save **once-off?**
Monthly contributions: **R2 500** Total amount at the end of 24 months: **R74 286,84**	Once-off amount: **R60 000** Total amount at the end of 24 months: **R92 065,71**

[Adapted from https://uasv.co.za]

Use TABLE 2 above to answer the questions that follow.

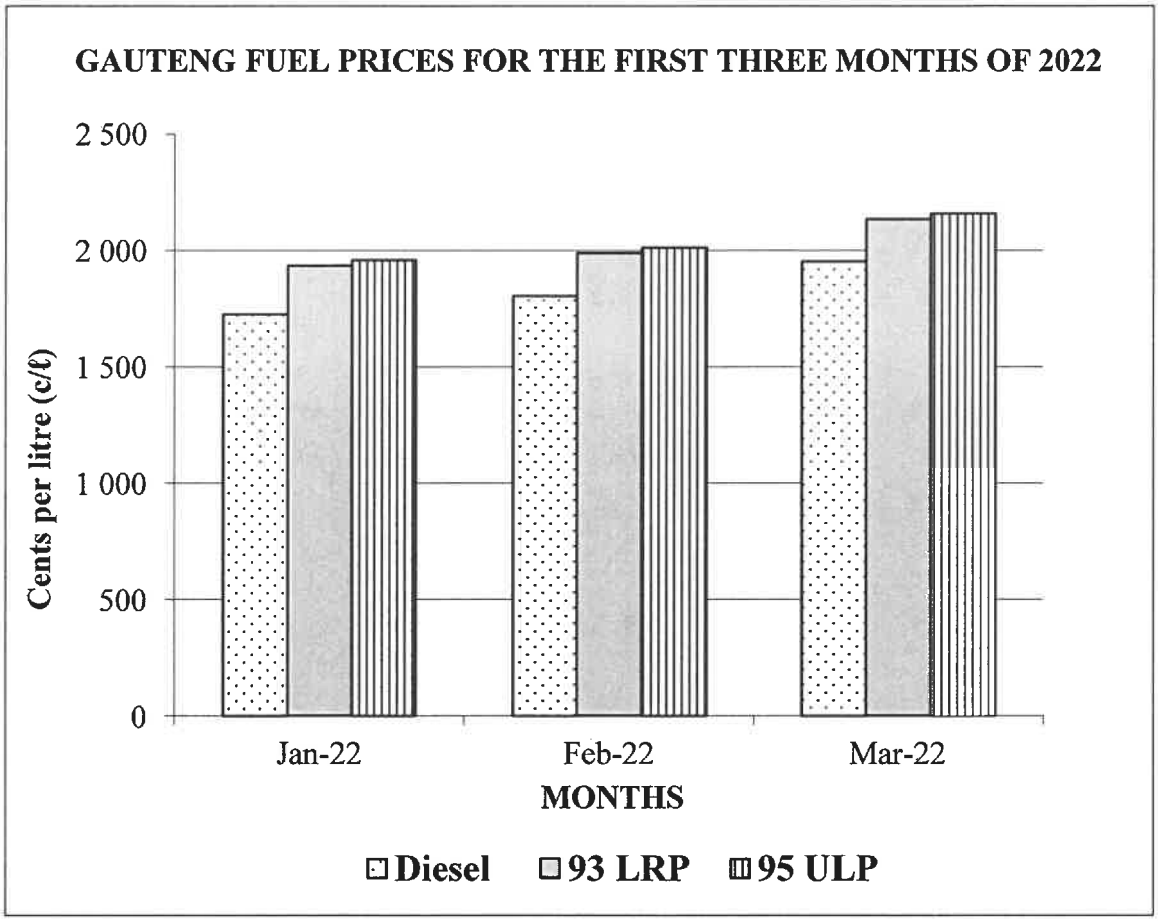
1.2.1 Define *investment* in the given context. (2)

1.2.2 Calculate the total contributions for Plan A over the 24-month period. (2)

1.2.3 Calculate the interest earned if a person invests in Plan B over the 24-month period. (2)

1.2.4 Determine how much more interest a person will earn investing in Plan B compared to investing in Plan A over the same 24-month period. (2)

1.3 The graph below shows (in cents/litre) the prices of three types of fuel in Gauteng for the first three months of 2022.



NOTE:
93 LRP = Lead Replacement Petrol
95 ULP = Unleaded Petrol

[Adapted from www.sapia.org.za]

Use the graph above to answer the questions that follow.

1.3.1 Name the type of graph drawn above. (2)

1.3.2 Identify the type of fuel that cost the most in February 2022. (2)

1.3.3 The price of diesel in March 2022 was 1 955,28 c/ℓ.

Write this price in rand per litre. Round off your answer to the nearest R0,50. (3)

[30]

QUESTION 2

2.1 ANNEXURE A shows a summary of Bomvana's Vehicle and Household Insurance Policy.

Use ANNEXURE A to answer the questions that follow.

2.1.1 Write down the policy number of Bomvana's insurance policy. (2)

2.1.2 Determine the missing value **A**, the monthly premium for the VW Polo. (4)

2.1.3 Bomvana qualifies for a discount on his insurance premiums as he has insured many items.

Calculate the percentage discount that he receives if the total monthly premium before the discount was R2 450,36. (3)

2.1.4 Bomvana was involved in a motor vehicle accident during July 2022. The quotation for damages from the panel beaters was R43 520,00.

Determine the amount the insurance company will pay the panel beaters. (2)

2.1.5 Calculate the amount of VAT included in the total monthly premium. (3)

2.1.6 The premium for the Toyota Corolla is much lower than that of the VW Polo.

Give ONE possible reason for this big difference in the premium amount. (2)

2.1.7 Bomvana pays a MiHome premium for household content cover to the value of R200 000. After the household contents were evaluated for insurance purposes, he bought an additional lounge suite.

Explain how the purchase of this new item will affect his MiHome content premium. (2)

2.2 The sanitation tariffs for Johannesburg and Cape Town are presented in TABLE 3.

Johannesburg uses the area of a property to determine the sanitation bill. Cape Town uses a percentage of the total water usage to determine the sanitation bill (the same way as they calculate the water bill.)

TABLE 3 shows the tariffs of Johannesburg (excluding VAT) and Cape Town (including VAT).

TABLE 3: SANITATION TARIFFS FOR JOHANNESBURG AND CAPE TOWN

JOHANNESBURG: SANITATION TARIFFS – DOMESTIC (VAT excl.)		
	Up to and including 300 m^2	R228,06
	Larger than 300 m^2 to 1 000 m^2	R443,96
	Larger than 1 000 m^2 to 2 000 m^2	R671,63
	Larger than 2 000 m^2	R967,71

CAPE TOWN: SANITATION TARIFFS – DOMESTIC (VAT incl.)			
	USAGE	**TARIFF**	**INCREASE FROM PREVIOUS**
	0–4,2 kℓ	R16,03 per kℓ	R0,66 increase per kℓ
	4,2–7,35 kℓ	R22,02 per kℓ	R0,91 increase per kℓ
	7,35–24,5 kℓ	R30,92 per kℓ	R1,28 increase per kℓ
	24,5–35 kℓ	R48,65 per kℓ	R2,01 increase per kℓ

[Adapted from www.pikitup.co.za and www.capetown.gov.za]

NOTE: Sanitation refers to waste water that is drained from a household.

Use the information above to answer the questions that follow.

2.2.1 Write down, to the nearest ten cents and excluding VAT, the cost for sanitation in Johannesburg if a property is 175 m^2. (2)

2.2.2 Calculate the cost for 4,1 kℓ sanitation in Cape Town before the increase. (4)

2.2.3 Mr Jones lives in Johannesburg and Ms Brown lives in Cape Town. They both own a property with an area of 550 m^2 and each was billed for 22 kℓ sanitation.

Use the table above to determine the difference in the cost of sanitation for the two properties. (8)

2.2.4 Explain how the tariff system used in Johannesburg is beneficial to home owners in terms of water usage. (2)

[34]

QUESTION 3

3.1 TABLE 4 below shows the number of people per province working in TWO workplaces, namely Usual Workplace (UWP) and Work From Home (WFH) for the last quarter of 2020 and the first quarter of 2021.

TABLE 4: PEOPLE PER WORKPLACE BY PROVINCE

PROVINCES	LAST QUARTER 2020 (IN TEN THOUSANDS)			FIRST QUARTER 2021 (IN TEN THOUSANDS)		
	UWP	WFH	Total	UWP	WFH	Total
Western Cape	147,7	21,7	**169,3**	150,8	18,4	**169,2**
Eastern Cape	72,3	7,2	**79,6**	84,9	5,6	**90,5**
Northern Cape	24,2	0,5	**24,7**	23	0,5	**23,5**
Free State	56,9	3,2	**60,1**	53,4	2,9	**56,3**
KwaZulu-Natal	199,9	9,4	**209,3**	193,1	9,5	**202,6**
North West	46,4	2,4	**48,8**	51,3	3,1	**54,4**
Gauteng	342,4	36,6	**379**	365,9	33,1	**399,0**
Mpumalanga	93,8	5,8	**99,6**	98	5,7	**103,7**
Limpopo	91,4	6,3	**97,7**	95,6	4,7	**100,3**
TOTAL	**1 075**	**---**	**1 168,1**	**1 116**	**83,5**	**1 199,5**

[Adapted from www.statssa.gov.za]

Use TABLE 4 above to answer the questions that follow.

3.1.1 Show how the total value of 83,5 for South Africa was calculated. (2)

3.1.2 Give ONE reason why the values in the table will differ from the actual workplace values. (2)

3.1.3 Write down the number of people who worked at their usual workplaces (UWP) in Gauteng during the first quarter of 2021. (2)

3.1.4 Give ONE example of a job that cannot be done by working from home. (2)

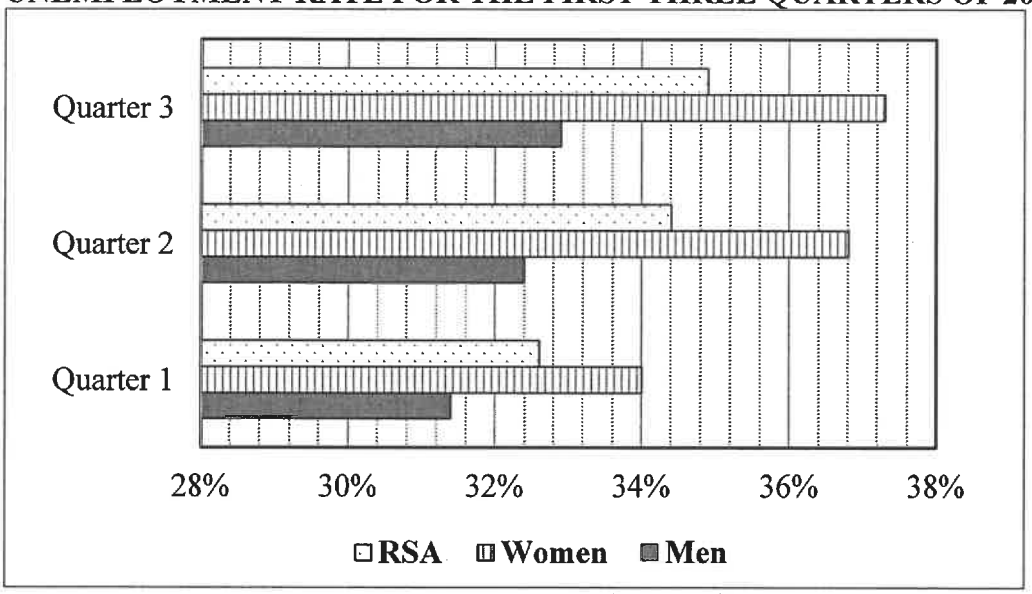
3.1.5 Calculate the mean number of people in the WFH category for South Africa in the last quarter of 2020. (4)

3.2 South Africa's unemployment rate increased from 34,4% in Quarter 2 to 34,9% in Quarter 3 of 2021.

The number of unemployed people in Quarter 2 was 7,6 million, which is 183 000 less than in Quarter 3.

The graph below indicates the unemployment rate for the different genders and the total for South Africa for the first three quarters of 2021.

UNEMPLOYMENT RATE FOR THE FIRST THREE QUARTERS OF 2021



[Adapted from Statistics South Africa]

Use the information above to answer the questions that follow.

3.2.1 Write down the quarter which showed the highest rate of unemployed men. (2)

3.2.2 Calculate the number of unemployed people in Quarter 3. (3)

3.2.3 Determine the increase in percentage of unemployed women from Quarter 1 to Quarter 3 in 2021. (3)

3.2.4 The unemployment rate for Quarter 2 was 34,4%.

Determine the number of people employed in South Africa during Quarter 2. (4)

[24]

QUESTION 4

4.1 Mr Louw, aged 53, earned an annual taxable income of R495 602 for the year ending 28 February 2022. He does not contribute to any medical aid.

Use the above information to answer the questions that follow.

4.1.1 The following formula can be used to calculate annual tax payable before the rebate:

Annual Tax Payable before the rebate
= R115 762 + [36% × (annual taxable income – 488 700)]

Use this formula to calculate Mr Louw's annual tax payable before the rebate. (3)

4.1.2 Mr Louw feels that the monthly tax table is an easier option for him to calculate his monthly tax payable.

TABLE 5 below shows the monthly deductions for three income categories for the year ending 28 February 2022.

TABLE 5: MONTHLY DEDUCTION TAX TABLE FOR THREE INCOME CATEGORIES FOR THE YEAR ENDING 28 FEBRUARY 2022

Monthly Income	Tax payable per age group		
	Under 65	65–74	Over 75
R41 241–R41 291	R8 473	R7 723	R7 473
R41 292–R41 342	R8 491	R7 741	R7 491
R41 343–R41 393	R8 510	R7 760	R7 510

The monthly rebate for a person younger than 65 years old is R1 368,75.

Verify, showing ALL calculations, whether his monthly tax will be correct according to the monthly deduction table. (6)

4.1.3 Write down the probability of selecting a monthly tax amount of R8 473 for a person over 75 years from this monthly tax table. (2)

4.2 The pie charts on ANNEXURE B compare the five best-selling vehicles in South Africa, America and Canada for 2021.

Use ANNEXURE B to answer the questions that follow.

4.2.1 Write down, in words, the total number of vehicles sold in America. (2)

4.2.2 Express as a ratio in the form __ : __ : __, the number of Toyota RAV4s sold in America, Canada and South Africa respectively. (2)

4.2.3 Write down the median number of the best-selling vehicles in South Africa. (2)

4.2.4 Determine the number of Ford F-series vehicles sold in Canada. (3)

4.2.5 The interquartile range for the top 10 vehicles sold in South Africa is 7 669 and the value of Quartile 1 is 11 408.

Calculate the value of Quartile 3. (4)

4.2.6 The inflation rate in America for 2021 was 7% and in 2020 it was 1,4%. The price of a Ford F-series vehicle in 2022 is $32 332.

It is stated that the price of the Ford F-series vehicle in 2020 was more than $29 800.

Verify, showing ALL calculations, whether this statement is valid. (6)

4.2.7 Determine, as a percentage, the probability of purchasing a Ram Pickup in America. (3)

[33]

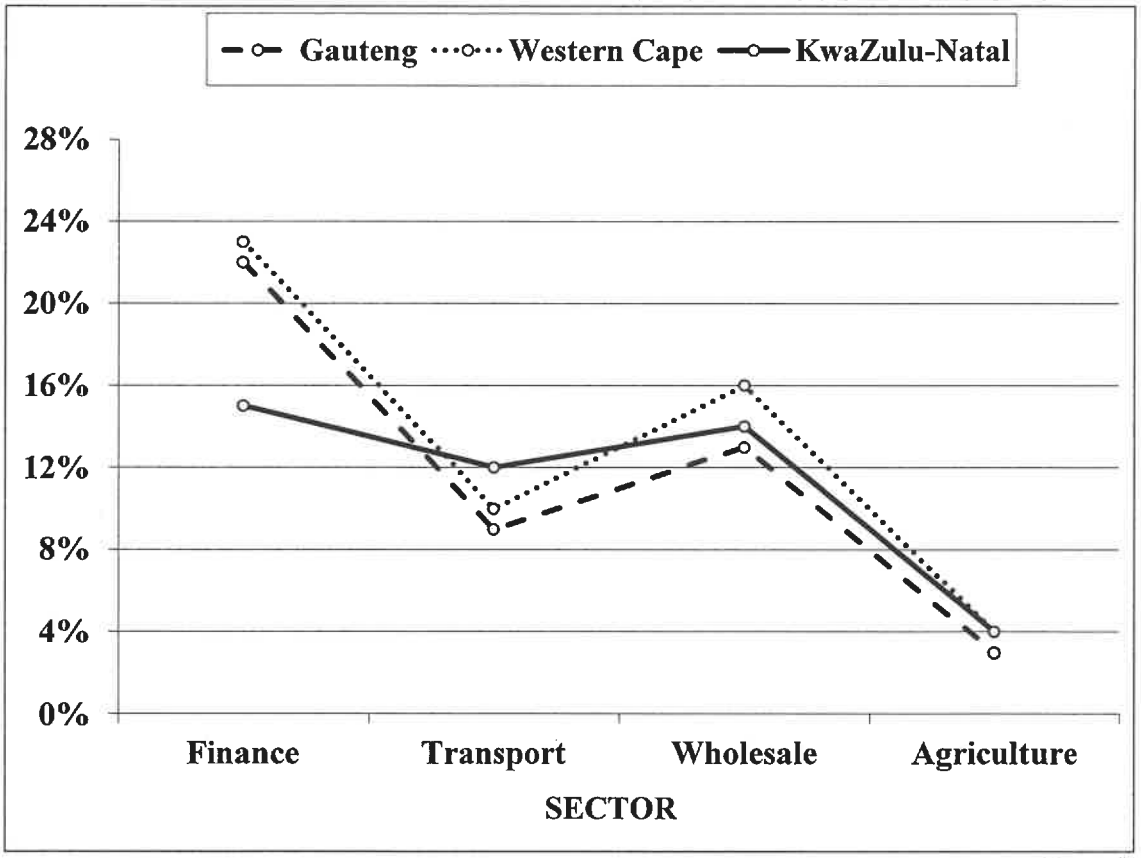
QUESTION 5

5.1 During the 2008–2012 period, South Africa recorded an average growth rate of just over 2%, largely due to the global economic recession.

Gauteng, KwaZulu-Natal and the Western Cape collectively contributed a significant portion to the country's growth.

The graph below shows the contributions of these three provinces towards the different sectors.

CONTRIBUTIONS OF THREE PROVINCES TO THE COUNTRY'S GROWTH



[Adapted from www.statssa.gov.za]

NOTE: A global economic recession leads to a drop in a country's economy.

Use the above information to answer the questions that follow.

5.1.1 Write down the province that contributed the most to the wholesale sector. (2)

5.1.2 The total amount contributed by the three provinces to agriculture was R8,3 billion. Determine which part of this amount Western Cape contributed. (4)

5.1.3 Identify the sector in which KwaZulu-Natal made a 12% contribution. (2)

5.1.4 Name the sector that has the largest range. (2)

5.1.5 Name ONE province that made the most significant contribution towards the growth of most of the sectors. (2)

5.2 Ryan is a South African citizen who owns a company in South Africa and wants to buy shares in a company in Canada.

TABLE 6 shows the exchange rate for five countries on 17 March 2022.

TABLE 6: EXCHANGE RATE FOR FIVE COUNTRIES ON 17 MARCH 2022

CURRENCY	UNITS PER ZAR	ZAR PER UNIT
Euro	0,060673	16,480
British pound	0,050862	19,662
Japanese yen	7,9596	0,12565
Canadian dollar	0,084845	11,785
Russian rouble	6,97481	0,143373

[Adapted from www.xe.com/currencyconverter]

NOTE: A share is a unit of ownership of a company.

Use TABLE 6 to answer the questions that follow.

5.2.1 Identify the currency which is the weakest against the rand. (2)

5.2.2 Show how the Russian rouble of 0,143373 ZAR per unit was determined. (2)

5.2.3 Ryan decides to invest R1 230 000 in shares in a Canadian company.

Convert R1 230 000 into Canadian dollar (CAD). (3)

5.2.4 Give ONE reason why you would motivate Ryan to invest in a Canadian company. (2)

5.2.5 After 2 years and 8 months, Ryan sold his shares and received a final amount of R1 529 360.

In South Africa Ryan would have received an interest rate of 8,1%, compounded annually, for 2 years and 8 months.

Ryan stated that he earned more than R14 000 return on his foreign investment compared to a potential South African investment.

Verify, showing ALL calculations, whether Ryan's statement is valid. (8)
[29]

TOTAL: 150

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GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P1/ *WISKUNDIGE GELETTERDHEID V1*

NOVEMBER 2022

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 150

Symbol/*Kode*	Explanation/*Verduideliking*
M	Method/*Metode*
MA	Method with accuracy/*Metode met akkuraatheid*
MCA	Method with consistent accuracy/*Metode met volgehoue 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.*
NPR	No penalty for correct rounding/*Geen penalisasie vir korrekte afronding nie*
NPU	No penalty for omitting unit, but wrong unit is penalised/*Geen penalisasie indien die eenheid uitgelos is, maar wel indien 'n verkeerde eenheid gebruik word.*
AO	Answer only/*Slegs antwoord*

These marking guidelines consist of 20 pages and 2 pages of notes.
Hierdie nasienriglyne bestaan uit 20 bladsye en 2 bladsye met notas.

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 [30 MARKS/*PUNTE*] ANSWER ONLY FULL MARKS			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.1.1	Numerical / *Numeriese* ✓✓A	2A correct classification (2)	D L1 E
1.1.2	✓RT R11,99; R18,99; R39,99; R44,99; R54,99; R159,99 ; R169,99 ✓A	1RT all correct values 1A ascending order (2)	D L1 E
1.1.3	B ✓✓RT	2RT correct store (2)	D L1 E
1.1.4	White socks/*Wit kouse* = $\frac{R85,99}{5}$ ✓MA = R17,198 ✓A = R17,20 ✓R	1MA dividing by 5 1A price per pair 1R 2 decimal places (3)	F L1 E
1.1.5	Total cost / *Totale koste* ✓RT P = R110,00 + R163,00 + R186,00 + R40,50 + R85,00 + R349,00 + R318,00 = R1 251,50 ✓A	1RT correct values 1A simplification (2)	F L1 E
1.1.6 (a)	✓A The chance/likelihood of selecting Store C. ✓A *Die kans/waarskynlikheid om Winkel C te kies.*	1A chance/likelihood 1A store C (2)	P L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.6 (b)	0,3333333333 × 100% ✓MA = 33,33333333% = 33% ✓A	1MA calculating percentage 1A rounded percentage (2)	P L1 E
1.2.1	✓A An investment is any form of saving that you put into a financial scheme, bank or stokvel that will result in interest. ✓A *'n Belegging is 'n vorm van spaar waar jy geld in 'n finansiële skema, bank of stokvel sit wat sal lei na rente.*	1A form of savings 1A interest (2)	F L1 E
1.2.2	Total contributions/*Totale bydrae* R2 500 × 24 ✓MA = R60 000 ✓A	1MA multiply by months 1A simplification (2)	F L1 E
1.2.3	Interest earned/*Rente verdien* ✓MA R92 065,71 – R60 000 = R32 065,71 ✓A	1MA subtract correct values 1A simplification (2)	F L1 E
1.2.4	More interest/*Meer rente* ✓MA R92 065,71 – R74 286,84 = R17 778,87 ✓A	1MA subtracting correct values 1A simplification (2)	F L1 E
1.3.1	✓A Compound / Triple / Grouped / Multiple / Clustered bar graph ✓A *Saamgestelde/ Drievoudige/ Gegroepeerde / Veelvoudige staafgrafiek*	1A type 1A bar graph (2)	D L1 E
1.3.2	95 ULP / Unleaded petrol / ULP / 95 *95 ULP / Loodvrye petrol / ULP / 95* ✓✓A	2A correct product (2)	D L1 M
1.3.3	In rand /*In rand* 1 955,28 c/ℓ ÷ 100 ✓MA = R19,55/ℓ ✓A = R19,50/ℓ ✓R	1MA dividing by 100 1A rand per litre 1R rounding (3)	F L1 M
		[30]	

QUESTION/*VRAAG* 2 [34 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	Policy number / *Polisnommer* = 23388350 ✓✓RT	2RT correct number (2)	F L1 E
2.1.2	Table values excluding A and discount / *Tabel waardes uitsluitend A en die afslag* R7,16 + R200,41 + R520,41 + R133,16 + R201,79 + R23,30 + R9,07 ✓MA = R1 095,30 Value of A / *Waarde van A* ✓MCA R2 184,21 – R1 095,30 + R266,15 ✓MA = R1 355,06 ✓CA **OR/*OF*** ✓MA R1 095,30 + **A** + (– R266,15) = R2 184,21 ✓MA ✓MCA **A** = R2 184,21 + R266,15 – R1 095,30 = R1 355,06 ✓CA **OR/*OF*** Table values – A = / *Tabel waarde – A* = ✓MA (R7,16 + R200,41 + R520,41 + R133,16 + R201,79 + R23,30 + R9,07) – R266,15 ✓MA = R829,15 **A** = R2 184,21 – R829,15 ✓MCA = R1 355,06 ✓CA	1MA adding all premiums 1MCA subtracting from total premium 1MA adding the discount 1CA simplification **OR/*OF*** 1MA adding all premiums 1MCA subtracting from total premium 1MA adding the discount 1CA simplification **OR/*OF*** 1MA adding all premiums 1MA subtracting the discount 1MCA subtracting from total premium 1CA simplification (4)	F L3 D
2.1.3	Percentage discount / *Persentasie afslag* ✓RT $\frac{\text{R266,15}}{\text{R2 450,36}} \times 100\%$ ✓MA = 10,86% ✓CA	1RT correct amount 1MA correct %-calculation 1CA simplification	F L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.3	**OR/*OF*** ✓RT $\%\text{ discount} = \frac{\text{R2 450,36 - R2 184,21}}{\text{R 2 450,36}} \times 100\%$ ✓MA $= 10{,}86\%$ ✓CA **OR/*OF*** ✓RT $\text{Percentage discount} = 100\% - \left(\frac{\text{R2 184,21}}{\text{R2 450,36}} \times 100\%\right)$ = 100% - 89,14% ✓MA = 10,86% ✓CA	**OR/*OF*** 1RT correct amount 1MA correct %-calculation 1CA simplification **OR/*OF*** 1RT correct amount 1MA correct %-calculation 1CA simplification **NPR** (3)	
2.1.4	Claim amount / *Eisbedrag* ✓RT R43 520 – R7 000 = R36 520 ✓A	1RT identifying R7 000 1A claim amount (2)	F L1 M
2.1.5	Amount VAT / *BTW-bedrag* ✓A $\frac{15}{115} \times \frac{\text{R2 184,21}}{1}$ ✓MA = R284,90 ✓A **OR/*OF*** Amount before VAT = $\frac{\text{R2 184,21}}{1,15}$ ✓MA = R1 899,31 ✓A VAT amount = R2 184,21 – R1 899,31 = R284,90 ✓A	1A correct VAT calculation 1MA multiplying by $\frac{15}{115}$ 1A simplification **OR/*OF*** 1MA dividing by 1,15 1A VAT excluded amount 1A simplification (3)	F L2 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.6	The VW Polo costs more than the Toyota Corolla. / *Die VW Polo is duurder as die Toyota Corolla.* ✓✓O **OR/*OF*** The Toyota is an older model. / *Die Toyota is 'n ouer model.* (The VW is a newer model. */ Die VW is 'n nuuter model).* ✓✓O **OR/*OF*** The retail value of the VW Polo is higher, therefor replacement value is higher. */ Die herverkoopwaarde van die VW Polo is hoër, daarom is die vervangingswaarde duurder.* ✓✓O **OR/*OF*** The VW is a high risk vehicle. / *Die VW is 'n hoë risiko voertuig.* ✓✓O **OR/*OF*** The primary driver of the VW is a younger driver who is inexperienced as a driver. *Die primêre bestuurder van die VW is 'n jonger bestuurder wat 'n onervare bestuurder is.* ✓✓O	2O correct explanation (2)	F L4 M
2.1.7	His premium will increase as his household content value will increase to more than R200 000. / S*y premie sal verhoog aangesien sy huishoudelike inhoudswaarde gevolglik na meer as R200 000 sal verhoog.* ✓✓O	2O valid conclusion (2)	F L4 M
2.2.1	Cost of sanitation / *Koste van sanitasie* = R228,06 ✓RT = R228,10 ✓R	**AO** 1RT correct amount 1R correct rounding (2)	F L2 M
2.2.2	Tariff before increase / *Tarief voor verhoging* ✓RT R16,03 – R0,66 = R15,37 ✓A Cost of sanitation / *Koste vir sanitasie* 4,1 kℓ × R15,37 ✓MCA = R63,02 ✓CA	1RT reading from table 1A simplification 1MCA multiply by tariff 1CA simplification	F L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.2	**OR/*OF***	**OR/*OF***	
	Amount after increase / *Bedrag na verhoging* = R16,03 × 4,1 kℓ = R65,723 ✓A	1A simplification	
	Increase / *Verhoging* ✓RT = R0,66 × 4,1 kℓ = R2,706	1RT reading from table	
	Amount before increase / *Bedrag voor verhoging* = R65,723 – R2,706 ✓MCA = R63,02 ✓CA	1MCA multiply by tariff 1CA simplification (4)	
2.2.3	Sanitation Bill – Cape Town: Ms Brown *Sanitasierekening – Kaapstad*: *Me* Brown ✓MA ✓RT 4,2 kℓ × R16,03 = R 67,33 3,15 kℓ × R22,02 = R 69,36 14,65 kℓ × R30,92 = R452,98 = R589,67 ✓CA	1MA all *(3)* correct kℓ 1RT 3 tariffs 1CA finding total water bill	F L3 D
	Sanitation Bill – Johannesburg: Mr Jones *Sanitasierekening – Johannesburg: Mnr Jones* VAT / BTW: ✓RT $= R443,96 \times \frac{15}{100}$ = R66,59	1RT correct amount	
	Total amount / Totale bedrag = R443,96 + R66,59 ✓MCA = R510,55 ✓CA $= R443,96 \times \frac{115}{100}$	1MCA adding values 1CA simplification	
	Difference in Sanitation Bill / *Verskil in Sanitasierekening* R589,67 – R510,55 ✓MCA = R79,12 ✓CA	1MCA subtracting values 1CA simplification (8)	

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.2.4	The fixed rate allows you to use as much as you can for the same amount. / *Die vaste koers laat jou toe om soveel as wat jy kan vir dieselfde bedrag te gebruik.* ✓✓O **OR/*OF*** It benefits home owners with smaller properties who pay less. */ Dit bevoordeel eienaars van kleiner huise wat minder gaan betaal.* ✓✓O **OR/*OF*** Even if the usage of water varies /differs from month to month, the cost/bill remains the same amount. / *Selfs as die water gebruik verskil van maand tot maand bly die koste/ rekening dieselfde.* ✓✓O	2O correct explanation (2)	F L4 M
		[34]	

QUESTION/*VRAAG* 3 [24 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1	Total value / *Totale waarde* ✓RT = 18,4 + 5,6 + 0,5 + 2,9 + 9,5 + 3,1 + 33,1 + 5,7 + 4,7 ✓MA = 83,5 **OR/*OF*** Total value / *Totale waarde* ✓RT = 1 199,5 – 1 116 ✓MA = 83,5	1RT correct values 1MA adding **OR/*OF*** 1RT both correct values 1MA subtracting (2)	D L1 E
3.1.2	The table value is given in ten thousands. ✓✓O *Die tabelwaarde is gegee in tien duisende.* **OR/*OF*** Rounding issues / *Probleme met afronding* ✓✓O	2O difference in table value from actual value **OR/*OF*** 2O rounding (2)	D L4 M
3.1.3	Number of people / *aantal mense* ✓RT = 365,9 × 10 000 = 3 659 000 **OR/*OF*** 365,9 ten thousand / *tien duisend* ✓A	1RT reading from table 1A correct value (2)	D L1 E
3.1.4	Medical sector e.g. doctor/ nurse Security sector e.g. police / security guards Essential services e.g. cashier Construction sector e.g. plumbing / electrician / builder Agricultural sector e.g. farming *Mediese sektor bv. doktor / verpleegster* ✓✓A *Sekuriteit sektor bv. polisie / sekuriteitswag* *Essensiële dienste bv. kasier* *Konstruksie sektor bv. loodgieter / elektrisiën / bouer* *Landbou sektor bv. boerdery*	2A correct job (2)	D L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.1.5	Mean in ten thousand / *Gemiddeld in tien duisend* ✓RT $= \frac{21{,}7 + 7{,}2 + 0{,}5 + 3{,}2 + 9{,}4 + 2{,}4 + 36{,}6 + 5{,}8 + 6{,}3}{9}$ ✓MA $= \frac{93{,}1}{9}$ ✓S $= \frac{1\,168{,}1 - 1\,075}{9}$ = 10,34444 Mean = 103 444,4 **OR/*OF*** 103 444 ✓CA	1RT adding correct values 1MA concept of mean 1S simplification 1CA correct mean **NPR** (4)	D L2 M
3.2.1	Quarter / *Kwartaal* 3 3rd / *3de* Third / *Derde* ✓✓RT	2RT correct quarter (2)	D L1 E
3.2.2	Number of unemployed / A*antal werkloos* ✓RT 7,6 million + 183 000 ✓C 7 600 000 + 183 000 = 7 783 000 ✓CA **OR/*OF*** ✓RT 7,6 million + 0,183 million ✓C =7,783 million / *miljoen* ✓CA	1RT correct values 1C correct conversion 1CA simplification **OR/*OF*** 1RT correct values 1C correct conversion 1CA simplification (3)	D L2 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.3	✓RT ✓RT Q1 = 34% ; Q3 = 37,4% Increase % / *Toename %* = 37,4% − 34% = 3,4% ✓CA	1RT quarter 1 1RT quarter 3 Accept quarter 3: 37,3% − 37,5% 1CA increase Accept: 3,3% − 3,5% (3)	D L2 M
3.2.4	Total number of people / *Totale aantal mense* $\frac{100}{34,4} \times$ 7,6 million ✓RT = 22 093 023,26 = 22 093 023 ✓A ✓MCA Number of employed people = 22 093 023 – 7 600 000 = 14 493 023 ✓CA **OR/*OF*** ✓RT Employed = 100% − 34,4% = 65,6% ✓A ✓MCA Number of employed people = $\frac{65,6}{34,4} \times$ 7 600 000 = 14 493 023 ✓CA	1RT correct percentage 1A simplification 1MCA subtracting values 1CA total number of people **OR/*OF*** 1RT correct percentage 1A simplification 1MCA ratio calculation 1CA total number of people **NPR** (4)	D L2 M
		[24]	

QUESTION/*VRAAG* 4 [33 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	Tax Payable (before rebates) = R115 762 + [36% × (annual taxable income – 488 700)] *Belasting betaalbaar (voor korting)* = R115 762 + *[36% × (jaarlikse belasbare inkomste 488 700)]* $\text{Tax payable} = \text{R}115\,762 + [\frac{36}{100} \times (495\,602 - 488\,700)]$ ✓SF = R115 762 + 2 484,72 ✓MA = R118 246,72 ✓CA	**AO** 1SF substituting value 1MA adding values 1CA simplification **NPR** (3)	F L2 E
4.1.2	Monthly tax (before rebate) / *Maandelikse belasting (voor belastingkorting)* = R118 246,72 ÷ 12 ✓MA = R9 853,89 ✓A After rebate / *Na belastingkorting* ✓MA = R9 853,89 – R1 368,75 = R8 485,14 ✓MCA Monthly taxable income (before rebate) / *Maandelikse belasting (voor belastingkorting)* = R495 602 ÷ 12 = R41 300,17 ✓A Tax payable (according to table) / *Belasting (volgens tabel)* = R8 491 He is incorrect / *Hy is verkeerd* ✓O **OR/*OF***	**CA from Question 4.1.1** 1MA dividing by 12 1A monthly tax 1MA subtracting rebate 1MCA finding tax after rebate 1A monthly income 1O conclusion **OR/*OF***	F L4 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.1.2	Annual rebate / *Jaarlikse korting* = R1 368,75 × 12 ✓MA = R16 425 ✓A Annual tax (after rebate) / *Jaarlikse belasting (na belastingkorting)* = R118 246,72 – R16 425 = R101 821,72 ✓A Monthly income / *Maandelikse inkomste* = R495 602 ÷ 12 = R41 300,17 ✓A Annual tax / *Jaarlikse belasting* = R8 491 × 12 = R101 892 ✓MCA He is incorrect / *Hy is verkeerd.* ✓O **OR/*OF*** Monthly tax before rebate / *Maandelikse belasting voor korting* = R118 246,72 ÷ 12 ✓MA = R9 853,89 ✓A Monthly taxable income / *Maandelikse belasbare inkomste* = R495 602 ÷ 12 = R41 300,17 ✓A Before rebate / *Voor korting* = R8 491 + R1 368,75 ✓MA = R9 859,75 ✓MCA He is incorrect / *Hy is verkeerd.* ✓O	1MA multiplying by 12 1A correct annual rebate 1A annual tax 1A monthly income 1MCA annual tax 1O conclusion **OR/*OF*** 1MA dividing by 12 1A correct answer 1A correct answer 1MA adding rebate 1MCA finding tax after rebate 1O conclusion (6)	F L4 D

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.3	Probability / *waarskynlikheid* 0 ; 0% ; impossible / *onmoontlik* / zero / *nul* ✓✓A	 2A probability (2)	P L2 M
4.2.1	Two million five hundred and eighty four thousand one hundred and seventy six. *Twee miljoen vyf honderd vier en tagtig duisend een honderd ses en sewentig.* ✓✓A	 2A correct words (2)	D L1 E
4.2.2	✓RT 407 739 : 61 934 : 36 085 ✓MA	1RT correct values 1MA correct order (2)	D L2 M
4.2.3	16 426; 18 235; 19 077; 21 887; 36 085 ✓A Median / *mediaan* = 19 077 ✓A	**AO** 1A arranging values 1A correct median (2)	D L2 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.4	Number of Ford F-Series / *Aantal Ford F-Reeks* ✓MA ✓RT = 357 243 – (53 757 + 51 684 + 73 467 + 61 934) = 357 243 − 240 842 = 116 401 ✓CA	**AO** 1RT correct values from graph 1MA subtracting from total 1CA simplification (3)	D L2 E
4.2.5	Interquartile range / *Interkwartielomvang* ✓A IQR = Q3 – Q1 ✓SF 7 669 = Q3 – 11 408 ✓MA Q3 = 7 669 + 11 408 = 19 077 ✓CA	**AO** 1A correct formula 1SF substituting into formula 1MA changing the subject of the formula 1CA simplification (4)	D L3 M
4.2.6	2020 Price of Ford F-Series / *2020 prys van Ford F-reeks* ✓RT $\$32\ 332 \times \frac{100}{107}$ ✓RT =\$30 216,82 ✓A 2019 Price of Ford F-Series/ *2019 prys van Ford F-reeks* $\$30\ 216{,}82 \times \frac{100}{101{,}4}$ ✓MA =\$29 799,63 ✓CA ✓O The statement is not valid / *Die bewering is nie geldig nie.* **OR/OF** 2019 Price of Ford F-Series / *2019 prys van Ford F-reeks* ✓RT ✓RT $\$32\ 332 \times \frac{100}{107} \times \frac{100}{101{,}4}$ ✓RT ✓RT =\$29 799,63 ✓CA The statement is not valid/ *Die bewering is nie geldig nie.*✓O	1RT numerator 1RT denominator 1A 2020 price 1MA concept of % decrease 1CA simplification 1O not valid **OR/*OF*** 1RT numerator 1RT denominator 1RT numerator 1RT denominator 1CA simplification 1O not valid (6)	F L4 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.7	Probability / *Waarskynlikheid* ✓RT $\frac{569\,388}{2\,584\,176} \times 100\%$ ✓RT = 22,03% ✓CA	1RT correct numerator 1RT correct denominator 1CA simplification **NPR** (3)	P L2 M
		[33]	

QUESTION/*VRAAG* 5 [29 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
5.1.1	Western Cape / *Wes-Kaap* ✓✓RT	2RT correct province (2)	D2 L2
5.1.2	✓RT 3% + 4% + 4% = 11% ✓A $= \frac{4}{11} \times$ R8 300 000 000 ✓MCA = R3 018 181 818 / R3,018181818 billion / *miljard* ✓CA ***OR/OF*** Total contribution / *Totale bydrae* ✓RT $= \frac{100}{11} \times$ R8 300 000 000 = R75 454 545 454 ✓A WC contribution / *WK bydrae* $= \frac{4}{100} \times$ R75 454 545 454 ✓MCA = R3 018 181 818 ✓CA	1RT all 3 values 1A simplification 1MCA calculating ratio 1CA simplification **OR/*OF*** 1RT correct values 1A simplification 1MCA calculating ratio 1CA simplification **NPR** (4)	F L3
5.1.3	Transport / *Vervoer* ✓✓RT	2RT correct sector (2)	D2 L2
5.1.4	Finance / *Finansies* ✓✓RT	2RT correct sector (2)	D2 L3
5.1.5	Western Cape / *Wes-Kaap* ✓✓RT	2RT correct province (2)	D2 L2
5.2.1	Japanese yen / *Japanese yen* ✓✓RT	2RT correct currency (2)	F L1 M
5.2.2	Russian Rouble = $\frac{1}{6{,}97481}$ ✓A ✓A = 0,143373	1A numerator 1A denominator (2)	F L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.2.3	✓A $= \frac{\text{R1 230 000}}{\text{R1}} \times \text{CAD}\,0{,}084845$ ✓MA = CAD 104 359,35 ✓A **OR/*OF*** ✓A $= \frac{\text{R1 230 000}}{\text{R11,785}} \times \text{CAD1}$ ✓MA = CAD 104 369,9618 = CAD 104 369,96 ✓A	1A correct exchange rate 1MA multiply with exchange rate 1A simplification **OR/*OF*** 1A correct exchange rate 1MA dividing by exchange rate 1A simplification **NPR** (3)	F L3 D
5.2.4	Diversify his income / *Diversifiseer sy inkomste.* ✓✓O **OR/*OF*** The Canadian currency is stronger / *Die Kanadese geldeenheid is sterker as die rand.* ✓✓O **OR/*OF*** He will get a better return on his investment / *Hy sal 'n beter opbrengs kry op sy belegging.* ✓✓O	2O reason (2)	F L4 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.2.5	Amount interest / *Bedrag rente* Year / *jaar* 1 $R1\ 230\ 000 \times \frac{8,1}{100}$ ✓MA = R99 630 ✓A Total after year 1 / *Totaal na jaar 1* R1 230 000 + R99 630 = R1 329 630 ✓A Year / *jaar* 2 $R1\ 329\ 630 \times \frac{8,1}{100}$ = R107 700,03 Total after year 2 / *Totaal na jaar 2* R1 329 630 + R107 700,03 = R1 437 330,03 ✓CA 8 months / *maande* $R1\ 437\ 330,03 \times \frac{8,1}{100} \times \frac{8}{12}$ ✓MA = R77 615,82162 Final amount / *Finale bedrag* = R1 437 330,03 + R77 615,82162 = R1 514 945,852 ✓CA R1 529 360 – R1 514 945,852 = R14 414,15 ✓CA His statement is valid. / *Sy bewering is geldig.*✓O	MA calculating 8,1% 1A interest year 1 1A amount end year 1 1CA amount year 2 1MA calculating 8 months 1CA final amount 1CA difference 1O conclusion	F L4 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
5.2.5	Total year 1 / *Totaal jaar 1* ✓A R1 230 000 × 1,081 ✓MCA = R1 329 630 ✓A Total year 2 / *Totaal jaar 2* R1 329 639 × 1,081 = R14 373 30,03 ✓CA Interest rate for 8 months / *Rentekoers vir 8 maande* 8,1% × 8 ÷ 12 = 5,4% ✓A Total after 2 years 8 months / *Totaal na 2 jaar en 8 maande* R1 437 330,03 × 1,054 = R151 4 945,85 ✓CA Difference in interest earned / *Verskil in rente verdien* R1 529 360 – R1 514 945,85 = R14 414,15 ✓CA The statement is valid / *Bewering is geldig.* ✓O	1A calculating 1,081 1MCA multiplying with 1,081 1A amount end year 1 1CA amount end year 2 1A calculating 5,4% 1CA final amount 1CA difference 1O conclusion **NPR** (8)	
		[29]	
		TOTAL/*TOTAAL*: 150	