



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

**MATHEMATICAL LITERACY P1
PREPARATORY EXAMINATION
SEPTEMBER 2023**

MARKS: 150

TIME: 3 hours

Stanmorephysics

**This question paper consists of 13 pages and
an Addendum with 4 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 4.3
 - ANNEXURE D for QUESTION 5.2
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 Economic hardships have been on the rise for South Africans. Comparing prices of basic grocery items has become the norm. Given below are prices of basic grocery items from different stores.

TABLE 1: PRICE BREAKDOWN OF FOOD ITEMS FROM DIFFERENT STORES

Item	Checkers	Pick n Pay	Spar	Woolworths	Shoprite	Food Lovers
Bread	R 18,99	R 18,99	R 20,99	R 18,99	R 18,99	R 19,45
Sunflower oil	R 89,99	R 94,99	R 109,99	R 93,99	R 89,99	R 84,99
Maize meal	R 36,99	R 42,99	R 34,99	R 35,99	R 36,99	R 34,99
White sugar	R 53,99	R 53,99	R 56,99	R 49,99	R 53,99	R 54,99
Milk	R 29,99	R 29,99	R 36,99	R 34,99	R 28,99	R 29,99
Rice	R 36,99	R 37,99	R 38,99	R 37,99	R 36,99	R 36,99
Flour	R 39,99	R 41,99	R 49,99	R 39,99	R 39,99	R 39,99
Soap	R 16,99	R 12,99	R 16,99	R 15,99	R 16,99	R 17,99
Toilet paper	R 84,99	R 84,99	R 74,99	R 78,99	R 69,99	R 69,99
TOTAL	R408,91	R418,91	A	R406,91	R392,91	R389,37

Source: [www.iol.co.za]

Use TABLE 1 above to answer the questions that follow.

- 1.1.1 State whether the data above is discrete or continuous. (2)
- 1.1.2 Write down the modal price for milk. (2)
- 1.1.3 Identify the minimum price for soap. (2)
- 1.1.4 Calculate the missing value A, the total for Spar. (2)
- 1.1.5 Determine the difference between the highest and lowest price for sunflower oil. (2)
- 1.1.6 Name the store that was the cheapest for all the items above. (2)



- 1.2 Maranatha Computer College wants to upgrade its CCTV (Closed Circuit Television) in its premises. Given below is one of the quotations for the installation from Tiger Security.

TABLE 2: QUOTATION FROM TIGER SECURITY

Account	Your Reference	Tax Exempt	Tax Reference	Sales Code	Expiry Date
MCC006	UPGRADE CCTV	N			16/01/2023
Code	Description	Quantity	Unit Price (R)	Tax (R)	Net Price (R)
C006	Hik analogue 1080p bullet	16	...	1 440,00	11 040,00
C40	16 ch Acusense Hik DVR	1	6 386,00	832,96	6 386,00
C032	4tb SV Rated SATH HDD	1	1 899,00	247,70	1 899,00
134	9 way PSU with 7 ah battery	5	1 420,00	926,09	7 100,00
I008	Cabling and sundries 500m	1	3 990,00	520,43	3 990,00
C061	Baluns	32	45,39	189,45	1 452,48
C009	Labour	16	300,00	626,09	4 800,00
C070	Camera mounting box	24	65,57	205,26	1 573,68
F004	Conduiting 16mm x 25mm	1	37 690,00	4 916,09	37 690,00
50% deposit is required on confirmation of quote.		Sub Total		66 027,09	
Balance due on invoice.		Discount @ 0,00%		0,00	
Received in good order.		Amount Excl. 15% Tax		66 027,09	
Signed: _____ Date: _____		Tax		9 904,06	
		TOTAL		75 931,15	

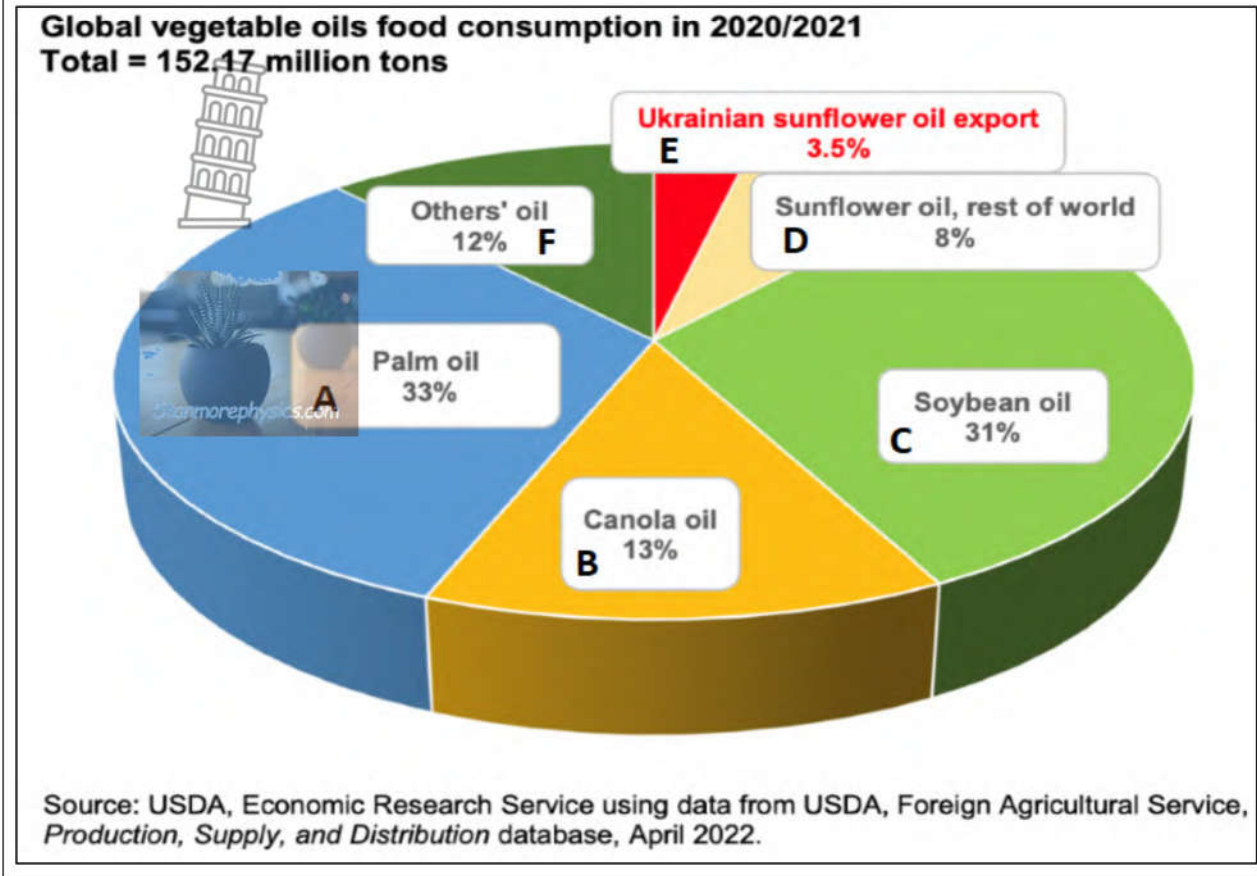
[Extracted from TIGER SECURITY CC]

Use TABLE 2 to answer the questions that follow.

- 1.2.1 Explain what is meant by *quotation* in the given context. (2)
- 1.2.2 Calculate the unit price for Hik analogue 1080p bullet. (2)
- 1.2.3 Write down, to the nearest ten cents, the total cost of the quotation. (2)
- 1.2.4 Show how the tax amount of R9 904,06 was determined. (2)
- 1.2.5 If Maranatha Computer College decides to accept the quotation above, calculate the deposit the college will have to pay. (2)
- 1.2.6 Calculate the cost per metre for cabling and sundries. (2)



1.3 The graph below shows the global oils food consumption in 2020/2021. Total consumption was 152,17 million tons.



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

- 1.3.1 Name the type of graph drawn above. (2)
 - 1.3.2 Arrange, in descending order, the percentage of oils consumed in 2020/2021. (2)
 - 1.3.3 Write 152,17 million as a number in full. (2)
- [30]**



QUESTION 2

- 2.1 Mr. G Ngwane received his clothing account statement from Truworths. ANNEXURE A shows an extract of his clothing account statement.

Use ANNEXURE A to answer the questions that follow.

- 2.1.1 Define the term *credit* in the given context. (2)
- 2.1.2 Write down the payment due date. (2)
- 2.1.3 Use the balance brought forward and transactions to show how the balance amount of R14 170,66 was determined. (3)
- 2.1.4 Calculate (rounded off to ONE decimal place) the interest as a percentage of the amount due on the statement. (3)

- 2.2 Mr. Ngwane's son Nkosi holds a valid Private Pilot License and he wants to get a Commercial Pilot's License.
Given below is the minimum flight time and the rate per hour.

N.B: A minimum of 200 hours total flight time, this includes:

- 100 hours PIC flight time by day at R1 725 per hour.
- 5 hours PIC flight time by night at R1 725 per hour.
- 50 hours of cross country flying as PIC at R1 725 per hour.
- 40 hours dual (with an instructor) instrument time broken down as follows:
 - *20 hours on Flight and Navigation Procedures Training at R945 per hour.
 - *20 hours dual (with an instructor) on PA28 – 161HF at R2 025 per hour.
- 5 hours dual (with an instructor) on AC50 at a total cost of R19 750.

PIC (Pilot in Command) flight - the trainee is responsible for the operation of the plane.

[Adapted from www.uni24.co.za]

Use the information above to answer the questions that follow.

- 2.2.1 Calculate the rate per hour for 5 hours dual on AC50. (2)
- 2.2.2 Nkosi claims that the total flight cost for the minimum 200 hours total flight time will not exceed R346 500. Use calculations to verify his claim. (4)



- 2.3 Mr Ngwane used Standard Bank online loan calculator to check what the monthly repayment will be on a loan of R300 000 to assist Nkosi with Commercial Pilot's License fees.

The bank charges a once off initiation fee of R1 207,50 which is not part of the monthly repayment and a monthly service fee (included in the monthly repayment) of R69.

Given below is the Standard Bank calculator output.

MONTHLY PAYMENTS AMORTISATION CALCULATOR HOW IT WORKS

How much can I get?

LOAN AMOUNT (ENTER AN AMOUNT BETWEEN R500 AND R300 000)
R **300 000**

LOAN TERM IN MONTHS
72 MONTHS

VARIABLE INTEREST RATE ⓘ
20,50 %

Your estimated monthly repayment
R **7 371**

First repayment date
1 March 2023

Monthly interest and fees
R **3 205**

[Adapted from www.standardbank.co.za]

Use the information above to answer the questions that follow.

- 2.3.1 Calculate the real cost of the loan.

You may use the formula:

$$\text{Real cost of loan} = \text{Monthly repayment} \times \text{Loan period} + \text{Initiation fee} \quad (2)$$

- 2.3.2 Show how the monthly interest and fees amount of R3 205 was calculated.

N.B: Banks normally round up this amount to the nearest one rand.

You may use the formula:

$$\text{Total Interest} = \text{Total Monthly Repayments} - \text{Loan amount} \quad (5)$$

- 2.3.3 Nkosi's sister works and lives in Canada and would like to send him Canadian dollars (CAD) equivalent to R50 000.

Use the exchange rate of **R1 = 0,0737862 CAD** to calculate the amount in Canadian dollars the sister has to send.

(3)

- 2.4 Mr Ngwane designs and makes bedroom and bathroom mirrors to supplement his income. He works from home after work and on Sundays.

TABLE 3: SK MIRRORS TOTAL COST AND TOTAL INCOME

Number of mirrors	0	1	2	3	4	5	6
Total Cost (R)	1500	2190	2880	3570	B	4950	5640
Total Income (R)	0	1065	2130	3195	4260	5325	6390

N.B: Each mirror is sold for R1 065



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

- 2.4.1 Write down a formula to determine the Total Cost of making mirrors. (4)
- 2.4.2 Calculate the missing value **B** in TABLE 3. (2)
- 2.4.3 Write down the co-ordinates of the break-even point. (2)
- 2.4.4 Define the term *break-even point* according to the given context. (2)

[36]



QUESTION 3

- 3.1 “**Big trouble for private schools in South Africa**” is an article published on 30 January 2023 by Business Tech. A survey was conducted to determine the percentage of parents who could afford to pay school fees in full. ANNEXURE B shows a graph of the findings of the survey that was conducted.

Use ANNEXURE B to answer the questions that follow.

- 3.1.1 Define the term *Survey* in the given context. (2)
- 3.1.2 Name ONE data collection instrument that could be used to collect the data on ANNEXURE B. (2)
- 3.1.3 By the end of 2020, the fourth quarter, just 56% of parents were able to afford school fees. Some private schools stated that the fourth quarter mean percentage for the period 2016 to 2022 will be less than 64%.
Verify, showing ALL calculations, whether this statement is valid. (5)
- 3.1.4 Write down the year which experienced the lowest percentage of parents being able to afford school fees and suggest one possible reason for this lowest percentage. (2)
- 3.1.5 If there were about 198 200 parents who sent their children to private schools in 2020, calculate (rounded off to the nearest whole number) the number of parents that were able to pay school fees in full by the end of the third quarter of 2020. (3)



- 3.2 Children in South Africa live under different household living conditions. Some of these living conditions and statistics are shown in TABLE 4 below.

TABLE 4 : HOUSEHOLD LIVING CONDITIONS FACED BY CHILDREN - 2018

PROVINCE	Children population 2018 ('000)	Children living in households without an employed adult (%)	Children experiencing hunger ('000)	Children experiencing hunger (%)	Children in public schools who benefit from school feeding (%)	Areas where fear of crime prevent children from going to parks (%)
WC	1 971	8%	288	15%	54%	47%
EC	2 514	46%	212	9%	90%	38%
NC	436	29%	73	17%	83%	57%
FS	1 021	35%	131	13%	80%	35%
KZN	4 184	36%	826	20%	84%	28%
NW	1 382	35%	284	21%	80%	21%
GP	4 186	15%	345	8%	55%	46%
MP	1 673	29%	222	13%	88%	39%
LM	2 374	41%	118	5%	91%	15%
Total	19 741	30%	2500	13%	77%	35%

[Adapted from www.resep.sun.ac.za]

Use TABLE 4 above to answer the questions that follow.

- 3.2.1 Calculate the children population range (as a number in full) for the 9 provinces. (2)
- 3.2.2 Arrange in ascending order, the percentages of areas where crime prevents children from going to parks. (2)
- 3.2.3 Use your answer in 3.2.2 to identify the province that will be used to determine Quartile 2 (Q_2). (2)
- 3.2.4 State which province has the highest percentage of children experiencing hunger. (2)

[22]



QUESTION 4

4.1 Mr. Parker, aged 44, earns a monthly basic salary of R74 800. He has a Medical Aid that covers himself, his wife and their 3 children. The following deductions are made from his salary.

- **Pay As You Earn (PAYE)**
- **UIF**
- **Medical Aid**
- **Pension Fund (7,5% of basic salary)**
- **Donation of R5 000 to an Orphanage**

N.B: UIF deduction for persons earning taxable income that is R17 712 or more per month is 1% of R17 712 or R177,12 per month.

TABLE 5: INCOME TAX TABLES – 2023/2024

Taxable Income (R)		Rates of Tax	
R0 – R 237 100		18% of each R1	
R237 101 – R 370 500		R 42 678 + 26% of the amount above R 237 100	
R370 501 – R 512 800		R 77 362 + 31% of the amount above R 370 500	
R512 801 – R 673 000		R121 475 + 36% of the amount above R 512 800	
R673 001 – R 857 900		R179 147 + 39% of the amount above R 673 000	
R857 901 – R1 817 000		R251 258 + 41% of the amount above R 857 900	
R1 817 001 and above		R644 489 + 45% of the amount above R1 817 000	
Tax Rebate		Tax Thresholds	
Primary	R17 235	Under 65	R 95 750
Secondary (65 and older)	R 9 444	65 and older	R148 217
Tertiary (75 and older)	R 3 145	75 and older	R165 689
Medical Tax Credits		Amount per month	
Principal member		R364	
First dependent		R364	
Each additional dependent		R246	

[Adapted from www.sars.gov.za]

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

4.1.1 Write down the amount that is deducted every month for UIF. (2)

4.1.2 Calculate Mr. Parker's annual pension fund deduction. (3)

4.1.3 Mr. Parker's pension fund and donation contributions are allowable tax deductions.

Calculate his annual taxable income.

You may use the formula:

Monthly taxable income = Basic salary – Pension fund – Donation (3)

4.1.4 Calculate Mr. Parker's annual Medical Tax Credits. (3)

4.1.5 Mr. Parker claims that if he had no medical, he would be paying R1 466 more on a monthly basis to SARS.

Verify, showing ALL calculations, if his claim is valid. (7)

- 4.2 The Minister of Finance, in his 2023 budget speech, introduced a Solar Panel Tax Incentive for individuals.

Individuals will be able to claim a rebate to the value of 25% of the new and unused solar photovoltaic (PV) panels, up to a maximum of R15 000 per individual. Only solar PV panels with a minimum capacity of 275W per panel (designed output) qualify for the rebate.

Mr. Parker bought 4 sets of 2-piece solar panels at R6 999,00 for each 2-piece from Takealot.



ECCO 400W High Quality Solar Panel PV Module
SP400 - 2 Piece

R 6 999
FREE DELIVERY

Buy Now, Pay Later

Buy on credit for R 653 p/m for 12 months using Mobicel.

+ Add to Cart

- Eligible for next-day delivery/collection
- Free Delivery Available
- Hassle-Free Exchanges & Returns for 30 Days

[Adapted from www.takealot.com]

Use the information above to answer the questions that follow.

- 4.2.1 Calculate the total cost of the solar panels. (2)
- 4.2.2 Use your answer in 4.2.1 to determine the solar rebate Mr. Parker is entitled to. (2)
- 4.2.3 Mr. Parker stated that his monthly income tax decreased to R14 605,02 after claiming the solar rebate. Verify, showing ALL calculations, whether Mr. Parker's statement is valid. (5)
- 4.3 Load shedding has been a problem since 2014, with the situation worsening thereafter. ANNEXURE C shows the number of calendar days on which rolling blackouts occurred and the number of hours the average consumer was disconnected from the grid during 2022.

Use ANNEXURE C to answer the questions that follow.

- 4.3.1 State one of the misleading characteristics of the two charts on ANNEXURE C. (2)
- 4.3.2 Nothando, a grade 12 Mathematical Literacy learner, claims that in 2022 an average consumer experienced 3,56 hours of power disconnection per day.
- Use the information on ANNEXURE C to verify her claim. (4)

QUESTION 5

- 5.1 Bluegrass Academy is a high school with 1 400 learners. The school collected data on the number of learners who travel to school by car, by foot and by bicycle and the information was summarised in the form of a two-way table shown below.

	CAR	FOOT	BICYCLE	TOTAL
BOYS	90	215	35	340
GIRLS	160	320	D	490
TOTAL	C	535	45	830

[Adapted from Bluegrass Academy]

Use the information above to answer the questions that follow.

- 5.1.1 Calculate the missing values **C** and **D**. (4)
- 5.1.2 Calculate the probability of randomly choosing a girl who travels to school by car. Write your answer as a percentage, rounded off to 2 decimal places. (3)
- 5.2 Mrs. Dunn has 3-year-old twins, a boy and a girl. She has been monitoring their growth using the Growth Chart for boys and girls shown in ANNEXURE D.

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

- 5.2.1 Calculate the difference between the weights (at 30 months) of the twins at the 50th percentile. (3)
- 5.2.2 At 30 months, Mrs. Dunn's daughter had her weight on the 25th percentile. Explain what this means. (2)
- 5.2.3 Calculate the BMI for her son who is 3 years old, with a length (in cm) in the 25th percentile and weighs 16,6 kg. Give your answer in kg/m^2 .

You may use the formula:

$$\text{BMI} = \frac{\text{Weight in kg}}{(\text{height in m})^2} \quad (4)$$

- 5.3 Mrs Dunn managed to save R50 000 as part of R80 000 deposit for a new car. Her parents are willing to give her a loan of R30 000 to be paid back with interest at the end of 12 months at 8,4% p.a interest compounded quarterly.

Use the information above to answer the following questions.

- 5.3.1 Calculate the quarterly interest rate. (2)
- 5.3.2 Manually calculate the total amount of money she will be owing her parents by the third quarter. (6)
- 5.3.3 Calculate the difference in the total amount paid to the parents if the parents charged Mrs Dunn 8,4% per annum simple interest on the loan. (5)

[29]

TOTAL MARKS: [150]



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PREPARATORY EXAMINATION

ADDENDUM

SEPTEMBER 2023

This addendum consists of 5 pages with 4 annexures.



ANNEXURE A

QUESTION 2.1

Truworths Limited CIPC Reg. no. 1940/013923/06
Truworths is a registered credit provider no. NCRCP45

STATEMENT

TRUWORTHS

MR G NGWANE
PRIVATE BAG X108
EMPANGENI

3880

DATE: 11 December 2022

YOUR ACCOUNT NUMBER

10100*****

ACCOUNT LIMIT

R13 150,00

YOU CAN BUY FOR

R0,00

ARREARS

R0,00

INSTALLMENT

R1 271,57

Your amount due is
R1 271,57

Statements are accepted as correct unless queried in 60 days.

YOUR BALANCE BROUGHT FORWARD

R10 825,30

DATE	TRANSACTIONS	DEBITS/CREDITS
14 November 2022	DO- 644 Payment - Thank You	1 100,00 CR
	6 MONTHS INTEREST FREE Closing Plan Balance	91,57
	12 MONTHS - INTEREST BEARING Empangeni	899,00
28 November 2022	1029376 Gift Card Purchase	1 000,00
07 December 2022	1017211 Empangeni	1 930,00
10 December 2022	1021061 E-Commerce Web Store	205,00
10 December 2022	2010055 E-Commerce Web Store	199,00
10 December 2022	2019951 Interest	212,36
12 December 2022	Closing Plan Balance	14 079,09
BALANCE AS AT 11 DECEMBER 2022		R14 170,66
PAYMENT DUE DATE: 04 January 2023		AMOUNT DUE R1 271,57

PAYMENT METHODS

1. Pay online with a cheque or credit card.
2. ATM or Electronic Funds Transfer (EFT).
3. Pay at any Truworths store

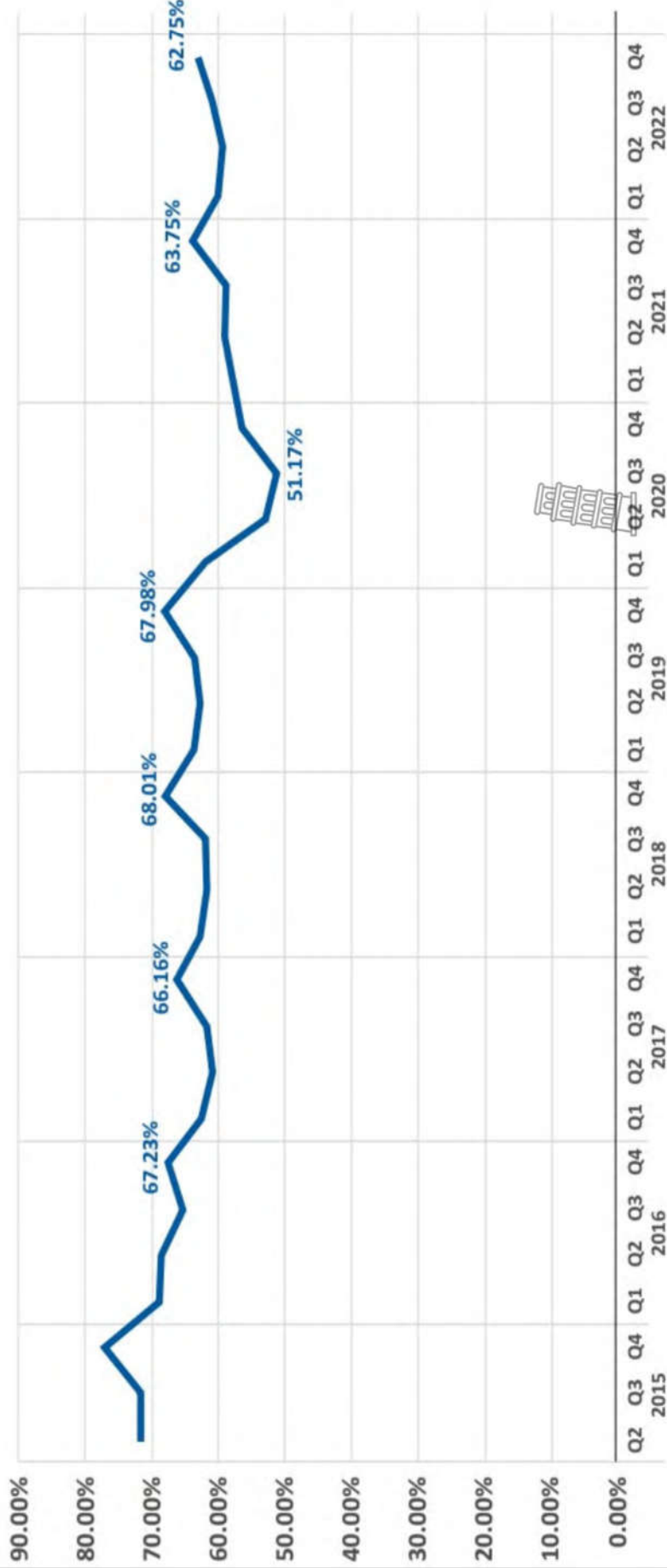
[Adapted from Ngwane Account Statement]

ANNEXURE B

QUESTION 3.1

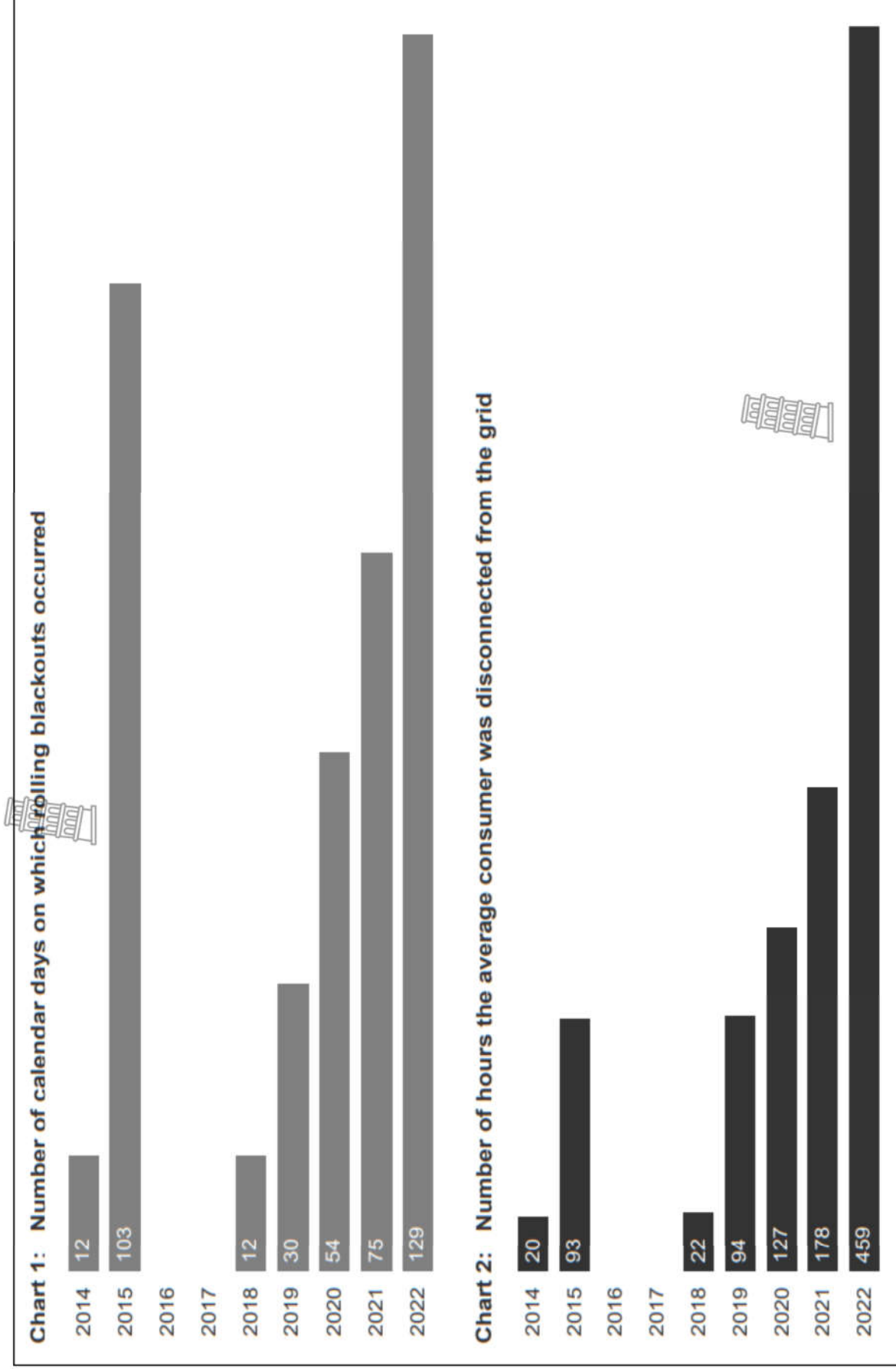


SCHOOL FEES: NATIONAL GOOD STANDING



Source: <http://businesstech.co.za/news/>

ANNEXURE C



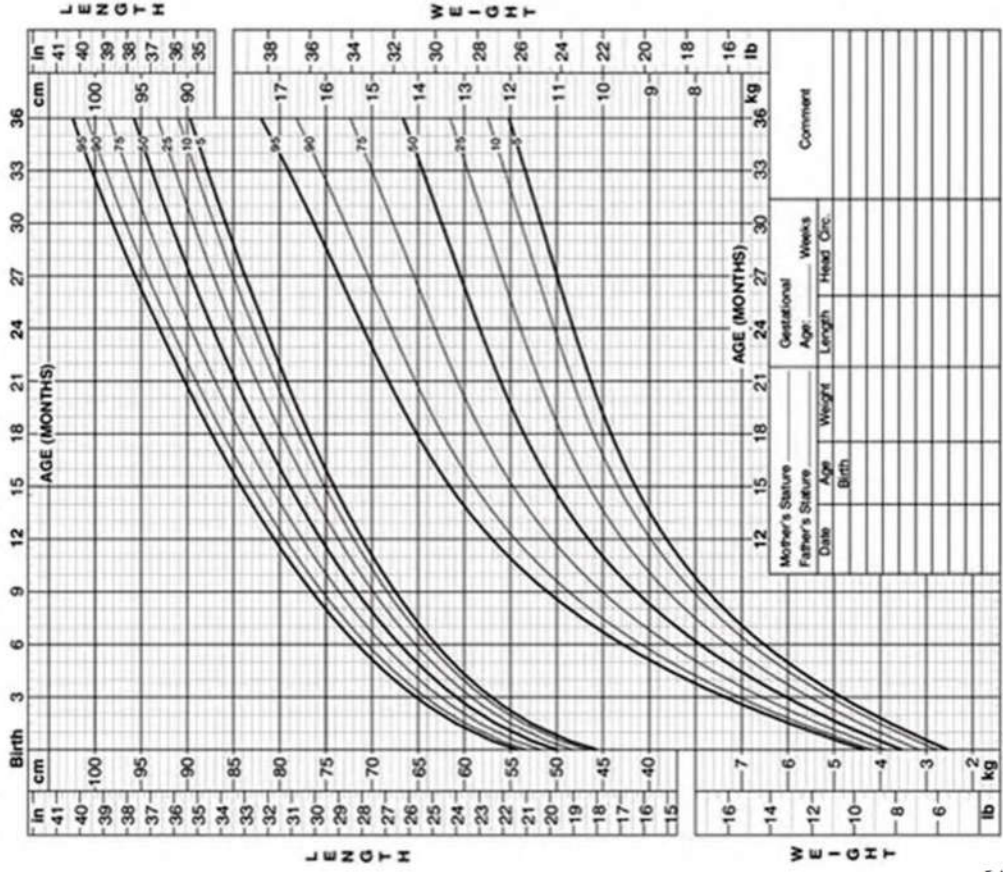
Source: <http://businesstech.co.za/news/>



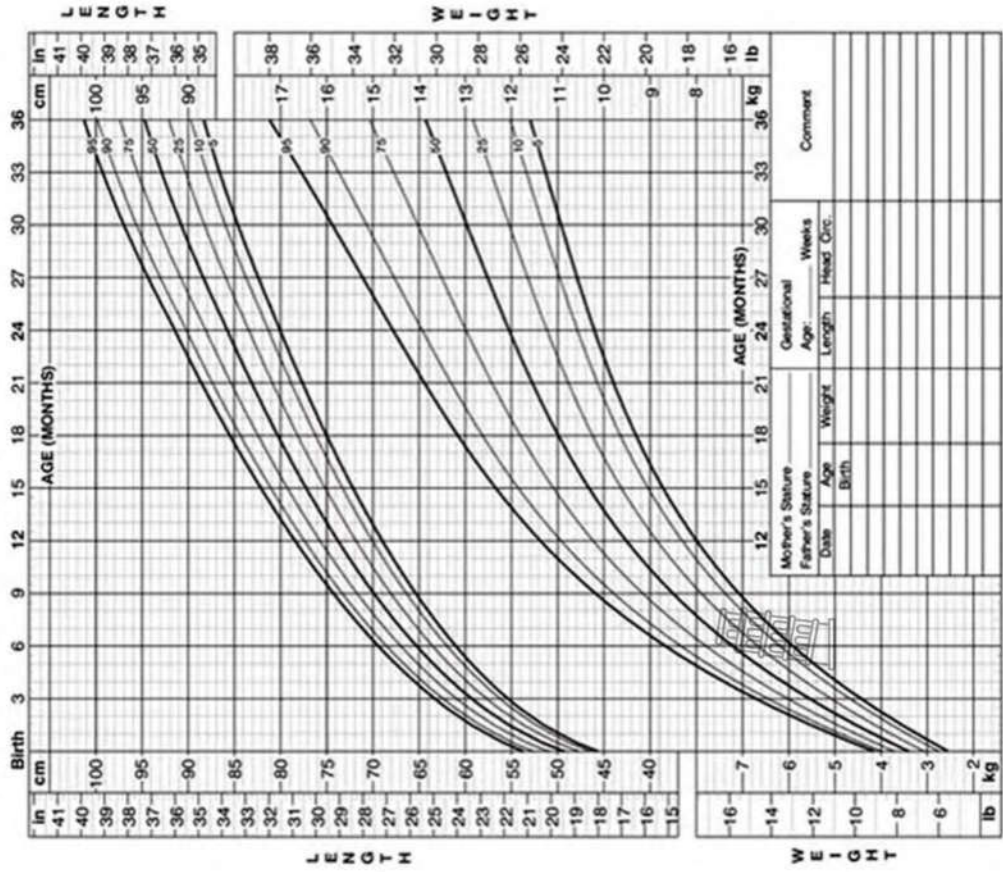
ANNEXURE D

QUESTION 5.2

Birth to 36 months: Boys
 Length-for-age and Weight-for-age percentiles



Birth to 36 months: Girls
 Length-for-age and Weight-for-age percentiles





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MARKING GUIDELINE**

SEPTEMBER 2023

MARKS: 150

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD/RM	Reading from a table/ graph/ diagram/map
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example/Explanation
J	Justification
R	Rounding off
F	deriving a formula
AO	Answer only full marks
P	Penalty e.g. for units, incorrect rounding off etc.
NPR	No penalty for rounding / units

This marking guideline consists of 9 pages.



QUESTION 1 [30 MARKS] ANSWER ONLY FULL MARKS			
Ques	Solution	Explanation	T & L
1.1.1	Discrete ✓✓ A	2A correct answer (2)	DH L1
1.1.2	R29,99 ✓✓ RT	2RT correct answer (2)	DH L1
1.1.3	R12,99 ✓✓ RT	2RT correct answer (2)	DH L1
1.1.4	A = R20,99 + R109,99 + R34,99 + R56,99 + R36,99 + R38,99 + R49,99 + R16,99 + R74,99 ✓ MA = R 440,91 ✓ A	1MA adding all correct values 1A correct Amount	
1.1.5	Difference = R109,99 – R84,99 ✓ MA = R25,00 ✓ A	1MA subtracting R84,99 from R109,99 1A answer AO (2)	DH L1
1.1.6	Food Lovers ✓✓ RT	2RT reading from table (2)	DH L1
1.2.1	It is a formal statement or document that Tiger Security issued to Maranatha Computer College to upgrade the CCTV at a stated price. ✓✓ A	2A correct definition (2)	F L1
1.2.2	Unit price = R11 040 ÷ 16 ✓ M = R690 ✓ A	1M for dividing R11 040 by 16 1A correct answer (2)	F L1
1.2.3	R75 931,10 ✓✓ R	2R correct answer Accept R75 931,20 (2)	F L1
1.2.4	$\begin{aligned} & \text{Tax amount} = R75\ 931,15 - R66\ 027,09 \\ & = R9\ 904,06 \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} & \text{Tax amount} = R66\ 027,09 \times 15\% \\ & = R9\ 904,06 \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} & \text{Tax amount} = R75\ 931,15 \times \frac{15\%}{115\%} \\ & = R9\ 904,06 \end{aligned}$	1RT for R75 931,16 1MA subtracting R66 027,09 1RT for R66 027,09 1MA multiplying by 15% 1M for multiplying by 15% 1M for dividing by 115% (2)	F L1


1.2.5	$\text{Deposit} = 50\% \times R75\,931,15 \checkmark M A$ $= R37\,965,58 \checkmark A$ <p style="text-align: center;">OR</p> $\text{Deposit} = \frac{1}{2} \times R75\,931,15 \checkmark MA$ $= R37\,965,58 \checkmark A$ <p style="text-align: center;">OR</p> $\text{Deposit} = 0,5 \times R75\,931,15 \checkmark MA$ $= R37\,965,58 \checkmark A$ <p style="text-align: center;">OR</p> $\text{Deposit} = R75\,931,15 \div 2 \checkmark MA$ $= R37\,965,58 \checkmark A$	1MA multiplying by 50% 1A correct answer <p style="text-align: center;">OR</p> 1MA multiplying by $\frac{1}{2}$ 1A correct answer <p style="text-align: center;">OR</p> 1MA multiplying by 0,5 1A correct answer <p style="text-align: center;">OR</p> 1MA dividing by 2 1A correct answer <p style="text-align: right;">(2)</p>	F L1
1.2.6	$\text{Cost per metre} = R3\,990 \div 500 \checkmark M$ $= R7,98 \checkmark A$	1M dividing by 500 1A correct answer (2)	F L1
1.3.1	Pie chart $\checkmark \checkmark A$	2A correct answer <p style="text-align: right;">(2)</p>	DH L1
1.3.2	33%; 31%; 13%; 12%; 8%; 3,5% $\checkmark \checkmark A$	2A Correct answer <p style="text-align: right;">(2)</p>	DH L1
1.3.3	152 170 000 $\checkmark \checkmark A$	2A correct answer <p style="text-align: right;">(2)</p>	DH L1
[30]			

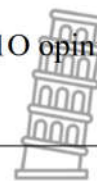
QUESTION 2 [36 MARKS]


2.1.1	It is the amount paid by Mr Ngwane for the clothing account. \checkmark	2A correct definition <p style="text-align: right;">(2)</p>	F L1
2.1.2	04 January 2023 or 04/01/2023 $\checkmark \checkmark A$	2A correct answer <p style="text-align: right;">(2)</p>	F L1
2.1.3	$\text{Balance amount} = R10\,825,30 - R1\,100 + R899 + R1\,000$ $+ R1\,930 + R205 + R199 + R212,36 \checkmark \checkmark M$ $= R14\,170,66$	1M subtracting R1 100 2M adding amounts <p style="text-align: right;">(3)</p>	F L2
2.1.4	$\text{Interest as a percentage} = \frac{R212,36 \checkmark RT}{R1\,271,57 \checkmark M} \times 100\%$ $\approx 16,7\% \checkmark R$	1RT for R212,36 1M dividing by R1 271,57 1R correct answer <p style="text-align: right;">(3)</p>	F L2
2.2.1	$\text{Rate per hour} = R19\,750 \div 5 \text{ hours} \checkmark M$ $= R3\,950/\text{hour} \checkmark A$	1M dividing by 5 1A correct answer <p style="text-align: right;">(2)</p>	F L2

2.2.2	$100 \text{ hrs} + 5 \text{ hrs} + 50 \text{ hrs} = 155 \text{ hrs} \checkmark A$ <p>Total flight cost = $155(R1\ 725) + 20(R945 + R2\ 025) + R19\ 750$ $= R346\ 525 \checkmark A$ Nkosi's claim is INCORRECT $\checkmark O$</p>	1M for adding 1A for 155 hours 1A correct answer 1O opinion (4)	F L4
2.3.1	$\text{Real cost of loan} = (R7\ 371 \times 72) + R1\ 207,50 \checkmark MA$ $= R531\ 919,50 \checkmark A$	1MA for multiplying by 72 and adding R1207,50 1A Correct answer (2)	F L2
2.3.2	$\text{Total Monthly Repayment} = 72 \times R7\ 371 \checkmark M$ $= R530\ 712 \checkmark A$ <p>Total interest = $R530\ 712 - R300\ 000 \checkmark M$ $= R230\ 712 \checkmark A$</p> <p>Monthly interest = $R230\ 712 \div 72 \checkmark M$ $= R3\ 205$</p>	1MA multiplying by 72 1A correct answer 1M subtracting R300 000 from R530 712 1A correct answer 1M dividing R230 712 by 72 (5)	F L3
2.3.3	$R1 = 0,0737862 \text{ CAD}$ $R50\ 000 = 50\ 000 \times 0,0737862 \text{ CAD} \checkmark M A$ $= 3\ 689,31 \text{ CAD} \checkmark A$	1A for 50 000 1MA Multiplying 0,0737862 by 50 000 1A correct answer (3)	F L2
2.4.1	$\text{Cost per mirror} = R2\ 190 - R1\ 500 \checkmark M$ $= R690 \checkmark A$ $\text{Total Cost} = R1\ 500 + R690 \times \text{total number of mirrors}$	1M subtracting R1 500 from R2 190 1A answer 1A for R1 500 1A multiplying by total number of mirrors (4)	F L3
2.4.2	$B = R1\ 500 + 4 \times R690 \checkmark MCA$ $= R4\ 260 \checkmark CA$	CA Q2.4.1 1MCA adding 4 and multiplying by 690 1CA correct answer (2)	F L2
2.4.3	$(4 ; R4\ 260)$	1A for 4 1A for R4 260 (2)	F L4
2.4.4	Mr Ngwane will know the minimum number of mirrors he needs to make and sell to start making profit. $\checkmark \checkmark O$	2O explanation (2)	F L4
		[36]	


QUESTION 3 [22 MARKS]			
3.1.1	A research method used to collect data to determine the percentage of parents that paid school fees. ✓✓A	2A correct definition (2)	DH L1
3.1.2	Questionnaire ✓✓A 	2A Correct answer (2)	DH L1
3.1.3	$\text{Mean} = \frac{67,23\% + 66,16\% + 68,01\% + 67,98\% + 56\% + 63,75\% + 62,75\%}{7} = 64,55\%$ ✓A ✓M The claim is NOT true ✓O	1A for 56% 1M adding correct values 1M dividing by 7 1CA correct answer 1O correct opinion (5)	DH L4
3.1.4	2020 ✓A Parents lost jobs due to Covid 19 ✓O	1A for correct year 1O for reason (2)	DH L4
3.1.5	Number of parents = $51,17\% \times 198\ 200$ ✓M A = 101 418,94 ✓A = 101 419 ✓R	1MA multiplying 198 200 by 51,17% 1A answer 1R rounding (3)	DH L2
3.2.1	Range = $4\ 186\ 000 - 436\ 000$ ✓M = 3 750 000 ✓A	1M subtracting 436 000 from 4 186 000 1A correct answer (2)	DH L2
3.2.2	15%; 21%; 28%; 35%; 38%; 39%; 46%; 47%; 57% ✓✓A	2A correct answer (2)	DH L1
3.2.3	Eastern Cape ✓✓RT	CA from 3.2.2 2 RT correct answer (2)	DH L1
3.2.4	North West ✓✓RT 	2 RT correct answer (2)	DH L1
		[22]	

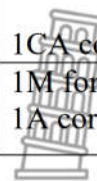
QUESTION 4 [33 MARKS]			
4.1.1	R177,12✓✓A	1A correct answer (2)	F L1
4.1.2	 $\begin{aligned} \text{Annual pension} &= 12(7,5\% \times R74\ 800) \\ &= R67\ 320 \end{aligned}$	1M multiplying by 12 1M multiplying R74 800 by 7,5% 1A correct answer (3)	F L2
4.1.3	$\begin{aligned} \text{Monthly taxable income} &= R74\ 800 - R5\ 000 - R5\ 610 \\ &= R64\ 190 \end{aligned}$ $\begin{aligned} \text{Annual taxable income} &= 12(R64\ 190) \\ &= R770\ 280 \end{aligned}$	1M multiplying by 12 1M subtracting R5000 and R5610 1A correct answer (3)	F L3
4.1.4	$\begin{aligned} \text{Annual Medical Tax Credit} &= 12(2 \times R364 + 3 \times R246) \\ &= R17\ 592 \end{aligned}$	1M for 12 1M multiplying R364 by 2 and R246 by 3 1A correct answer (3)	F L2
4.1.5	$\begin{aligned} \text{Annual tax with medical aid} &= R179\ 147 + 39\%(R770\ 280 - R673\ 000) \\ &= R217\ 086,20 \end{aligned}$ $\begin{aligned} \text{Annual tax payable} &= R217\ 086,20 - R17\ 235 - R17\ 592 \\ &= R182\ 259,20 \end{aligned}$ $\begin{aligned} \text{Monthly Tax Payable} &= R182\ 259,20 \div 12 \\ &= R15\ 188,27 \end{aligned}$ $\begin{aligned} \text{Annual Tax payable without Medical Aid} &= R217\ 086,20 - R17\ 235 \\ &= R199\ 851,20 \end{aligned}$ $\begin{aligned} \text{Monthly Tax Payable without medical Aid} &= R199\ 851,20 \div 12 \\ &= R16\ 654,27 \end{aligned}$ $\begin{aligned} \text{Difference} &= R16\ 654,27 - R15\ 188,27 \\ &= R1\ 466 \end{aligned}$ Claim is invalid	1SF substitution 1S simplifying 1M subtracting Rebate and MTC 1M dividing by 12 1M subtracting rebates 1M subtracting R15 188,27 1O opinion (7)	F L4




4.2.1	Total Cost = $4 \times R6\,999$ ✓M = R27 996 ✓A	1M multiplying R6 999 by 4 1A correct answer (2)	F L2
4.2.2	Solar rebate = $25\% \times R27\,996$ ✓MCA = R6 999 ✓CA 	CA from Q4.2.1 1M multiplying R27 996 by 25% 1CA correct answer (2)	F L2
4.2.3	$\text{Monthly tax} = \frac{R182\,259,20 - R6\,999}{12}$ ✓CA ✓MCA = R14 605,02 ✓CA His claim is valid ✓O <p style="text-align: center;">OR</p> Annual tax = $R182\,259,20 - R6\,999$ ✓MCA = R175 260,20 ✓CA Monthly tax = $R175\,260,20 \div 12$ ✓M = R14 605,02 ✓CA His claim is valid ✓O	CA from 4.1.5 1CA for R182 259,20 1MCA for subtracting R6 999 1M dividing by 12 1CA correct answer 1O opinion <p style="text-align: center;">OR</p> 1MCA subtracting R6 999 from R182 259,20 1CA simplifying 1M dividing by 12 1CA correct answer 1O opinion (5)	F L4
4.3.1	The horizontal axis is not drawn to scale. ✓✓A <p style="text-align: center;">OR</p> Scale and labels not clearly shown on graph. ✓✓A	2A correct answer (2)	DH L1
4.3.2	Number of days = 129 ✓RG Number of hours = 459 ✓RG Number of hours per day = $459 \text{ hours} \div 129 \text{ days}$ ✓M $\approx 3,56$ Her claim is valid ✓O	1RG for 129 1RG for 459 1M dividing 459 by 129 1A answer 1O opinion (4)	DH L4
		[33]	



QUESTION 5 [29 MARKS]			
5.1.1	$C = 160 + 90 \checkmark M$ $= 250 \checkmark A$ OR $C = 830 - 45 - 535 \checkmark M$ $= 250 \checkmark A$  $D = 45 - 35 \checkmark M$ $= 10 \checkmark A$ OR $D = 490 - 320 - 160 \checkmark M$ $= 10 \checkmark A$	1M adding 160 and 90 1A answer OR 1M subtracting 45 and 535 from 830 1A answer 1M subtracting 35 from 45 1A answer OR 1M subtracting 320 and 160 from 490 1A answer AO (4)	P L2
5.1.2	$P(\text{Girl travelling by car}) = \frac{160 \checkmark A}{830 \checkmark A} \times 100$ $= 19,28 \checkmark A$	1M for 160 1M dividing by 830 1A correct Answer (3)	P L3
5.2.1	Weight of the boy = 13,5 kg $\checkmark RG$ Weight of the girl = 13 kg $\checkmark RG$ Difference = 13,5 kg - 13 kg $\checkmark M$ $= 0,5 \text{ kg} \checkmark CA$	Accept leeway of 1 1RG weight of the boy 1RG weight of the girl 1M subtracting girl's weight from boy's weight 1CA answer (4)	DH L3
5.2.2	The daughter's weight is greater than 25% of the weights of girls of her age. $\checkmark \checkmark O$ OR Her daughter's weight is less than 75% of the weights of girls of her age. $\checkmark \checkmark O$	2O explanation (2)	DH L4
5.2.3	Height = 93cm $\checkmark RG$ height = 0,93m $\checkmark C$ weight = 16,6 kg $BMI = \frac{16,6 \text{ kg}}{(0,93)^2} \checkmark SF$ $= 19,19 \text{ kg/m}^2 \checkmark CA$	Accept leeway of 1cm 1RG height in cm 1C converting cm to m 1SF substitution 1CA correct answer (4)	DH L3
5.3.1	Quarterly interest rate = 8,4% $\div 4 \checkmark M$ $= 2,1\% \checkmark A$	1M for dividing by 4 1A correct answer (2)	F L2



5.3.2	<p>Quarter 1: Amount = $102,1\% \times R30\ 000 \checkmark M$ $= R30\ 630 \checkmark A$</p> <p>Quarter 2: Amount = $102,1\% \times R30\ 630 \checkmark M$ $= R31\ 273,23 \checkmark CA$</p> <p>Quarter 3: Amount = $102,1\% \times R31\ 273,23 \checkmark M$ $= R31\ 929,97 \checkmark CA$</p>  <p style="text-align: center;">OR</p> <p>Quarter 1: Amount = $(2,1\% \times R30\ 000) + R30\ 000 \checkmark M$ $= R30\ 630 \checkmark A$</p> <p>Quarter 2: Amount = $(2,1\% \times R30\ 630) + R30\ 630 \checkmark M$ $= R31\ 273,23 \checkmark CA$</p> <p>Quarter 3: Amount = $(2,1\% \times R31\ 273,23) + R31\ 273,23 \checkmark M$ $= R31\ 929,97 \checkmark CA$</p>	<p>CA Q5.3.1</p> <p>1M multiplying R30 000 by 102,1% 1A answer</p> <p>1M multiplying by R30 630 by 102,1% 1CA answer</p> <p>1M multiplying R31 273,23 by 102,1% 1CA answer</p> <p>1M multiplying R30 000 by 2,1% and adding R30 000 1A answer</p> <p>1M multiplying by R30 630 by 2,1% and adding R30 630 1CA answer</p> <p>1M multiplying R31 273,23 by 2,1% and adding R31 273,23 1CA answer</p> <p style="text-align: right;">(6)</p>	F L3
5.3.3	<p>Quarter 4: Amount = $102,1\% \times R31\ 929,97$ $= R32\ 600,50 \checkmark CA$</p> <p>Simple Interest = $8,4\% \times R30\ 000 \checkmark M$ $= R2\ 520$</p> <p>Total Amount = $R30\ 000 + R2\ 520$ $= R32\ 520 \checkmark A$</p> <p>Difference = $R32\ 600,50 - R32\ 520 \checkmark M$ $= R80,50 \checkmark CA$</p>	<p>CA from 5.3.2</p> <p>1MCA multiplying 31 929,97 by 102,1% 1M multiplying by 8,4%</p> <p>1A total amount 1M subtracting 1CA answer</p> <p style="text-align: right;">(5)</p>	F L3
		[29]	
TOTAL MARKS: 150			

