KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL
SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

SEPTEMBER 2024

MARKS: 150

TIME: 3 hours

This question paper consists of 14 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 2.1.3
   - 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 University education has become so expensive that only a few learners can afford to pay for their first-year education. TABLE 1 below shows the 2024 first year fees for the five faculties in the top eight South African universities.

TABLE 1: FIRST YEAR FEES (MAXIMUM) FOR EIGHT TOP UNIVERSITIES - 2024

University	BA Degree	BCom Degree	BSc Degree	LLB Degree	BEng Degree
University of Cape Town	R71 400	R98 140	R78 500	R72 570	R84 060
University of Witwatersrand	R65 100	R74 370	R70 430	A	R60 060
Stellenbosch University	R55 036	R57 006	R66 358	R55 841	R74 487
University of KwaZulu Natal	R49 628	R53 089	R61 408	R50 404	R59 583
University of Pretoria	R59 000	R60 000	R66 000	R56 000	R64 000
Rhodes University	R58 050	R63 510	R60 392	R65 119	N/A
University of Johannesburg	R56 470	R74 860	R79 860	R53 100	R66 810
University of Free State	R55 470	R55 830	R74 620	R45 390	N/A

[Extracted from www.businesstech.co.za]

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

1.1.1 State whether the data above for the five faculties is discrete or continuous. (2)

1.1.2 Write in words, the University of KwaZulu Natal fees for BA degree. (2)

1.1.3 Arrange the BSc degree fees for the eight universities in ascending order. (2)

1.1.4 Name the cheapest university for a BCom degree. (2)

1.1.5 Witwatersrand is the most expensive university for a LLB degree. Calculate **A**, given that the range for LLB for the eight universities is R27 610. (2)

1.1.6 If the University of Cape Town has 187 first year students doing Engineering, calculate the total fees received from the students. (2)

1.2 Nombuso has an account with Brooks Bank. An extract of Nombuso's bank statement is shown below.

NOMBUSO'S BANK STATEMENT

Date	Description	Debit (R)	Credit (R)	Balance (R)
10/03/2024	Balance brought forward			78 271,19
11/03/2024	ATM cash withdrawal	1 800,00		76 471,19
	Service fee	36,00		76 435,19
12/03/2024	Debit card: Spar	2 394,75		74 040,44
	Service fee	3,80		**B**
13/03/2024	Cash deposit		5 200,00	79 236,64
	Service fee	52,00		79 184,64
14/03/2024	Cellphone instant money transfer	300,00		78 884,64
	Service fee	9,00		78 875,64
15/03/2024	Salary deposit		42 893,76	121 769,40
16/03/2024	Debit order: Sanlam	1 203,98		120 565,42
	Service fee	3,50		120 561,92
16/03/2024	Debit order: Auto & Gen	749,68		119 812,24
	Service fee	3,50		119 808,74
16/03/2024	Truworths account (immediate payment)	1 803,98		118 004,76
	Service fee	1,20		118 003,56
20/03/2024	Cash withdrawal (inside the Branch)	9 750,00		108 253,56
	Service fee	300,50		107 953,06

[Extracted from Nombuso's Bank Statement]

Use the bank statement above to answer the questions that follow.

1.2.1 Explain what is meant by *balance brought forward* in the given context. (2)

1.2.2 Determine the missing value **B** in the bank statement. (2)

1.2.3 Calculate the total amount of cash withdrawals in the statement. (2)

1.2.4 Round off the salary deposited into Nombuso's account to the nearest thousand. (2)

1.2.5 Determine, as a unit ratio in the form **(1 : …)**, the ratio of the service fee of R52,00 to the ratio of the cash deposit on the 13th of March 2024. (2)

1.2.6 Calculate the difference between the highest and lowest service fee amounts in the statement. (2)

1.3   The graph below shows how the prices of different fuel types have increased between January 2019 and January 2024.

Fuel prices in South Africa
January 2019 vs January 2024
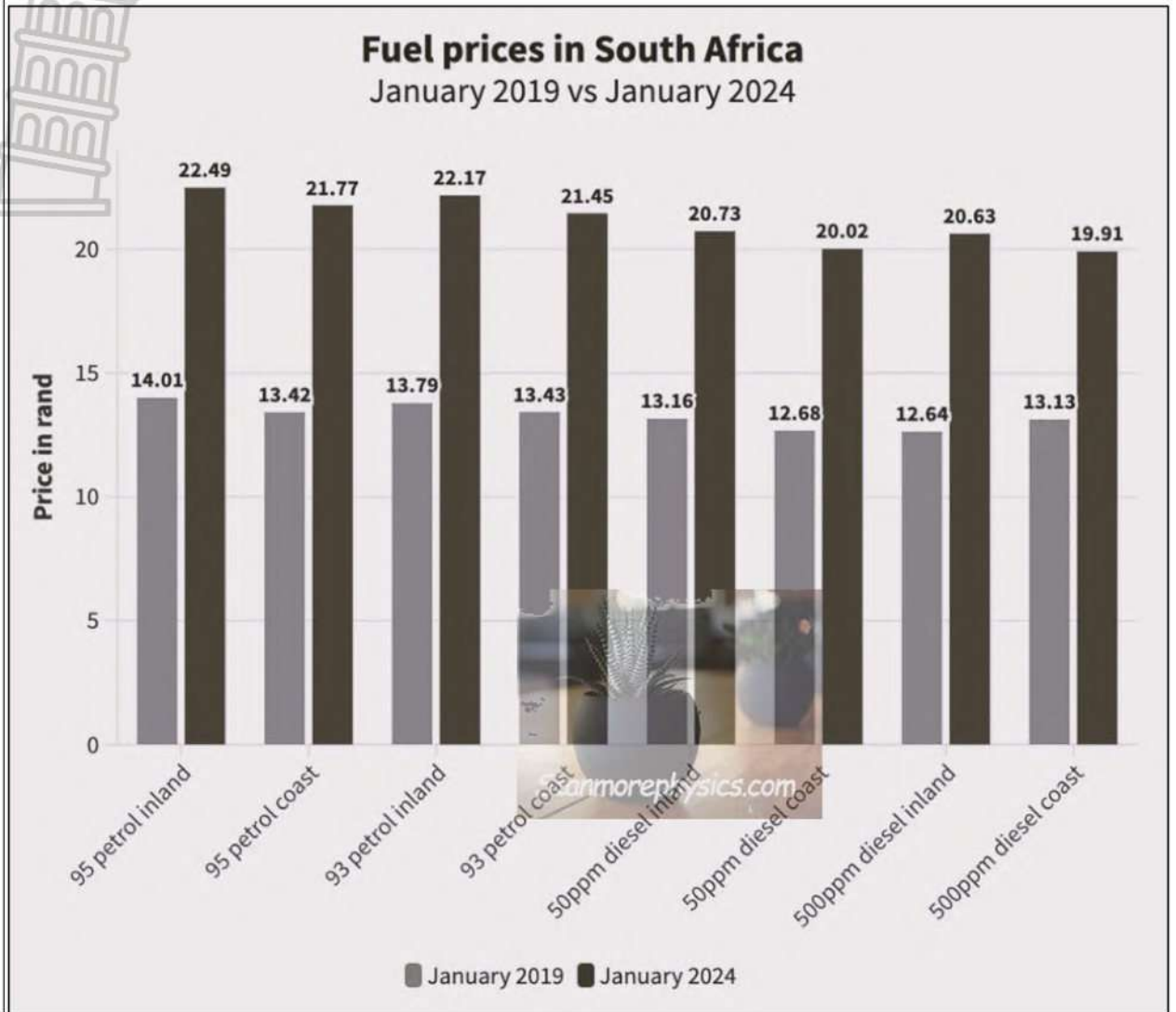
[Extracted from www.mybroadband.co.za]

Use the graph above to answer the following questions.

1.3.1   Identify the fuel type that has the second largest difference between the January 2024 price and the January 2019 price.   (2)

1.3.2   Calculate the difference between 95 petrol inland and 95 petrol coast prices for January 2024.   (2)

1.3.3   Write down the modal price for January 2019 fuel prices.   (2)

[30]

QUESTION 2

2.1   Lambert wants to buy a house in Durban. His bank can approve a housing loan of R1 500 000 to be paid back over a period of 25 years at 11,5% interest per annum. He saw an advert on the internet for a house in Morningside (Durban).

Features

CASH PRICE: R1 500 000

[Source: www.pamgolding.co.za]

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

2.1.1   Write down any two features of the property above.   (2)

2.1.2   Use TABLE 2 in ANNEXURE A to calculate Lambert's monthly repayment on a loan of R1 500 000.

You may use the formula:
Monthly Repayment = (Loan Amount × Loan Factor) ÷ 1 000   (3)

2.1.3   Use TABLE 3 in ANNEXURE B to calculate the total transfer and total bond cost Lambert will have to pay for the property above.   (2)

2.1.4   Lambert stated that if the bank gives him a loan of 105% of the property cash price, he will be able to buy the property above and pay the transfer and bond costs.

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

2.1.5   Calculate the total interest Lambert will pay if the bank agrees to a 105% home loan.   (6)

2.1.6   Lambert stated that the total transfer and bond cost is more than $\frac{1}{20}$ of the cash price of the property.

Verify, showing ALL calculations, whether his statement is VALID.   (4)

2.2   Lambert realizes that the 105% home loan from the bank will not be enough to cover all the costs. His friend is willing to give him a loan of R7 000 to be paid back in full after 2 years with the following conditions:
- Simple interest at 11,75% p.a for the first year.
- 12% p.a compounded half yearly for the second year.

Use the information above to answer the following questions.

2.2.1   Calculate the compounded half yearly interest rate for 6 months.   (2)
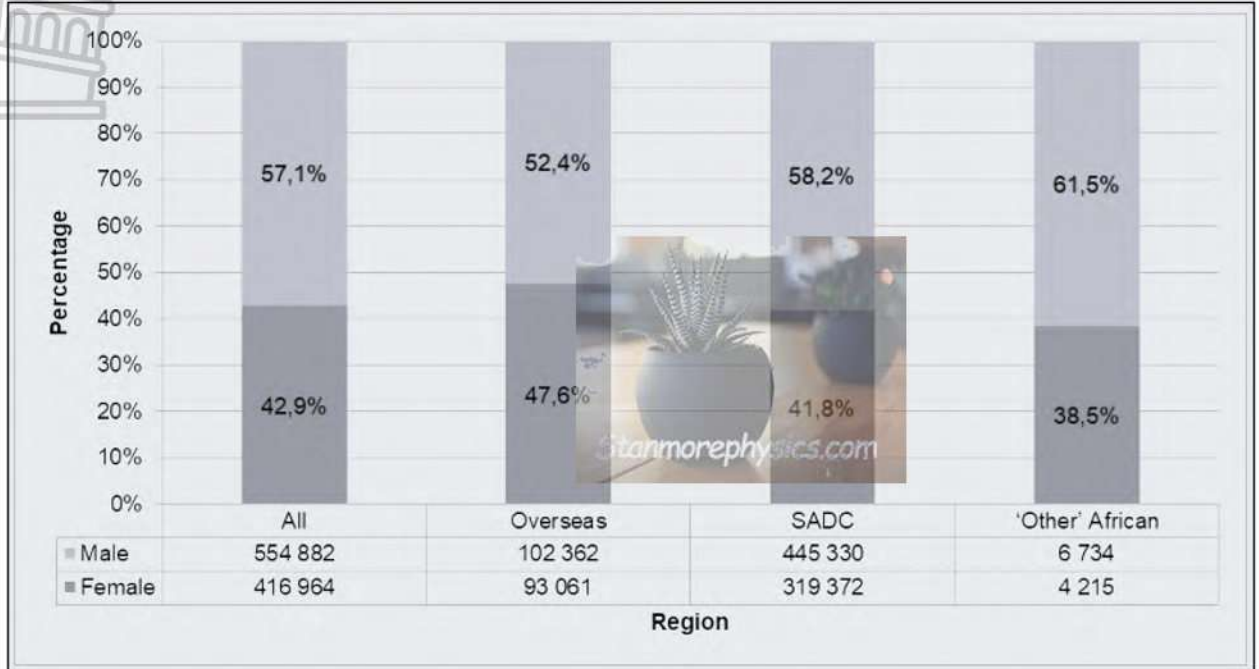
2.2.2   Manually calculate the total amount Lambert will have to pay his friend at the end of 2 years.   (6)

[32]

QUESTION 3

3.1 Tourism has always contributed a lot to the economy of South Africa. At the end of 2023 the total contribution was R268 billion (4,3% of total economy). The graph below shows the percentage distribution of tourists by region of residence and gender for January 2024.

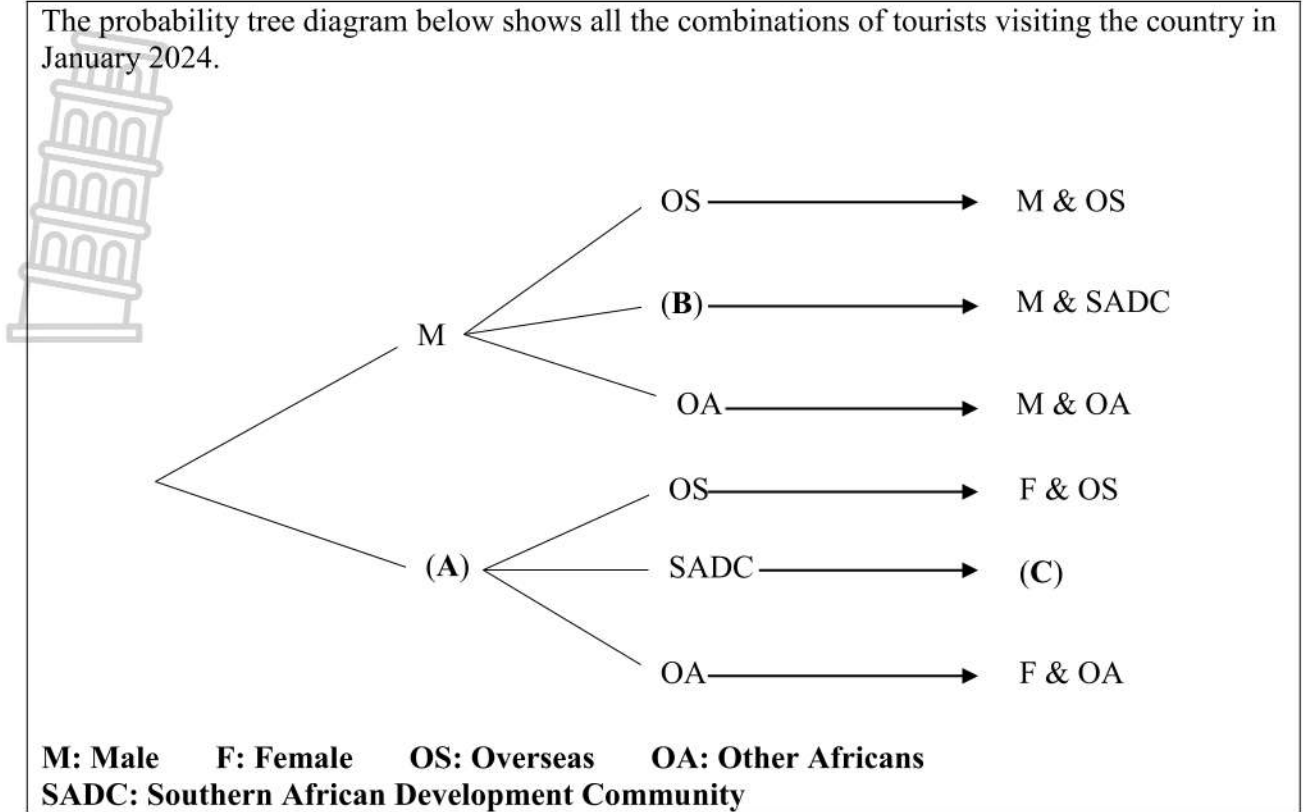|	All	Overseas	SADC	'Other' African
	57,1%	52,4%	58,2%	61,5%
	42,9%	47,6%	41,8%	38,5%
■ Male	554 882	102 362	445 330	6 734
■ Female	416 964	93 061	319 372	4 215

Region

[Adapted from www.statssa.gov.za]

Use the graph above to answer the questions that follow.

3.1.1 Name the type of graph shown above. (2)

3.1.2 Write down the gender that contributed the majority of tourists for all three regions. (2)

3.1.3 Calculate the mean percentage of the female tourists in all three regions (Overseas, SADC and Other African). (3)

3.1.4 The estimated 2023 population for the SADC region was 389,4 million people. Calculate the percentage of both male and female tourists in the SADC region who visited South Africa. (5)
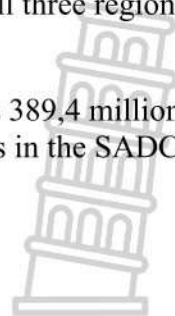
3.2 The probability tree diagram below shows all the combinations of tourists visiting the country in January 2024.


OS ⟶ M & OS

M (B) ⟶ M & SADC

OA ⟶ M & OA

OS ⟶ F & OS

(A) SADC ⟶ (C)

OA ⟶ F & OA

M: Male   F: Female   OS: Overseas   OA: Other Africans
SADC: Southern African Development Community

Use the tree diagram above to answer the questions that follow.

3.2.1 Complete the tree diagram by writing down the missing information for **A, B** and **C**. (3)

3.2.2 Determine the probability, as a simplified fraction, of randomly choosing a tourist from SADC. (3)

3.3 Mr Kert, a prominent farmer in KZN collected data on two types of tomatoes (Type A and Type B) and presented it in the form of a box-and-whisker plot as shown below.
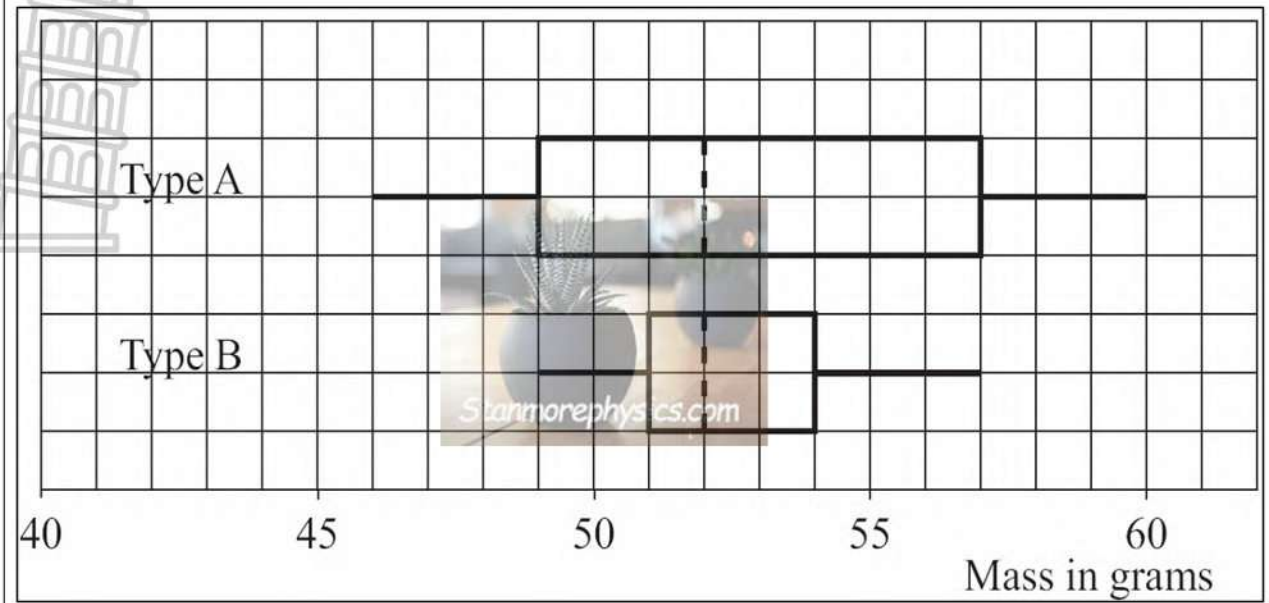
[Adapted from Kert's Garden Services]

Use the diagram above to answer the questions that follow.
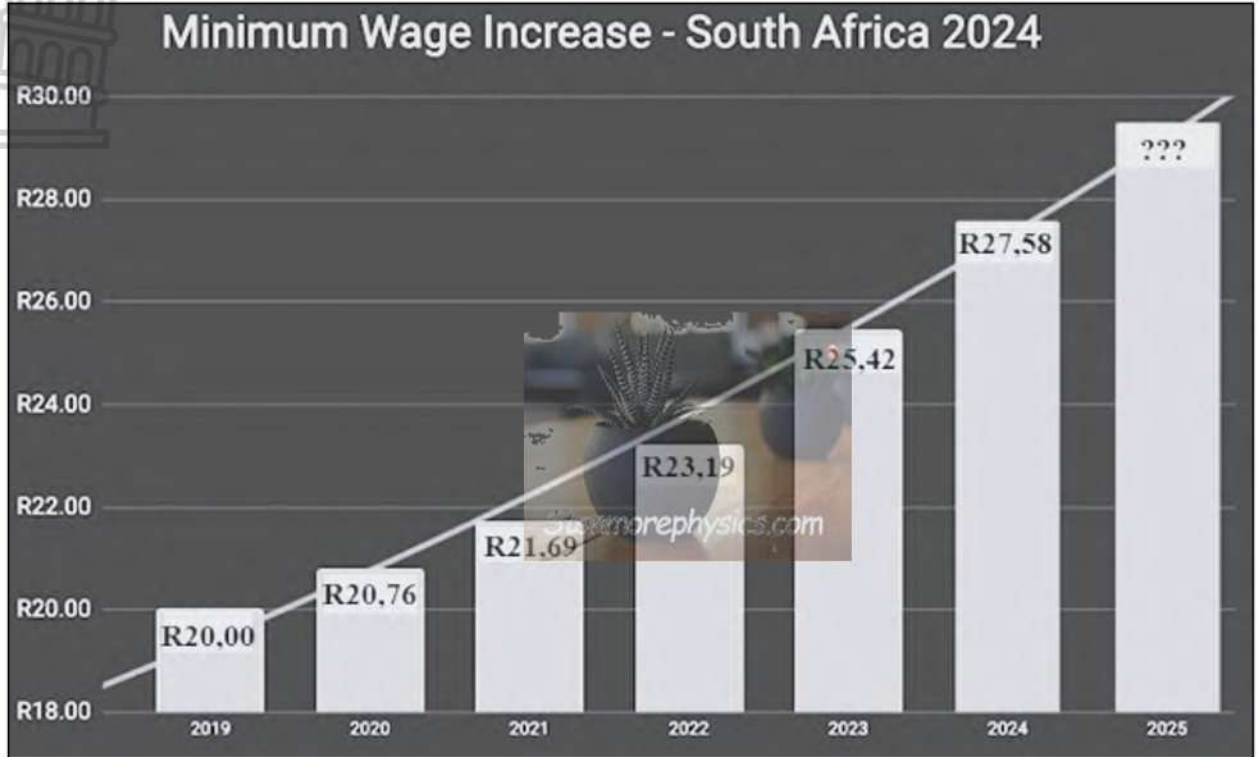
3.3.1 Write down the 25th percentile for Type B tomato. (2)

3.3.2 Identify the median mass for the two types of tomatoes. (2)

3.3.3 Calculate the difference between the Range and Interquartile Range (IQR) for Type A tomato. (5)

3.3.4 Based on the box and whisker plot shown above for both types of tomatoes, advise Mr Kert which type of tomato he should grow in future. (3)

[30]

QUESTION 4

4.1 Domestic workers have a stipulated minimum rate per hour. The employer must deduct UIF from the employee who will be employed for a year or more. The graph below shows how the hourly rates have changed from 2019 to 2024.

Minimum Wage Increase - South Africa 2024

Year	Rate
2019	R20,00
2020	R20,76
2021	R21,69
2022	R23,19
2023	R25,42
2024	R27,58
2025	???

[Adapted from www.agrigistics.co.za]

NOTE: 1 MONTH = 4,333 WEEKS

Use the information above to answer the questions that follow.

4.1.1 Calculate the percentage increase in rate from 2023 to 2024.

You may use the formula:

$$\text{Percentage Increase} = \frac{\text{Rate for 2024} - \text{Rate for 2023}}{\text{Rate for 2023}} \times 100\%$$ (3)

4.1.2 State one benefit of contributing to the Unemployment Insurance Fund (UIF).   (2)

4.1.3 Vuyo, a domestic worker, works 8 hours per day, Monday to Friday. She stated that her income per month after the 1 March 2024 rate increase is now R4 780,17.

Use calculations to verify her claim.   (5)

4.2   Mr. Naidoo is an educator and will be turning 65 in January 2025. Given his years of service in the profession, he expects his retirement fund to be R3 240 000. The following tax rule applies to retirement funds.

- At retirement **ONE THIRD** of the lump sum retirement benefit is tax free.

Given below are the 2024/2025 retirement tax tables.

TABLE 4: LUMP SUM RETIREMENT BENEFIT TAX TABLE 2024/2025

Taxable Portion of Lump Sum	Rates of Tax
R1 – R550 000	Nil
R550 001 – R770 000	18% of the amount over R550 000
R770 001 – R1 155 000	R39 600 + 27% of the amount over R770 000
R1 155 001 +	R143 550 + 36% of the amount over R1 155 000

[**Adapted from www.sars.gov.za**]

Use the information above to answer the questions that follow.

4.2.1   Calculate the portion of Mr. Naidoo's lump sum retirement benefit that is tax free.   (2)

4.2.2   Show that R143 550 for rates of tax on TABLE 4 is correct.   (3)

4.2.3   Calculate the amount of tax that will be deducted from Mr Naidoo's retirement lump sum benefit.   (5)

4.3   South Africa faces a significant challenge with unemployment. ANNEXURE C shows the unemployment rates for the nine provinces between second quarter (Q2) of 2023 and third quarter (Q3) of 2023.

Use ANNEXURE C to answer the questions that follow.

4.3.1   Write down the number of provinces that experienced an increase in unemployment from Q2 2023 to Q3 2023.   (2)

4.3.2   State ONE reason for an increase in unemployment from Q2 2023 to Q3 2023.   (2)

4.3.3   Calculate the unemployment rate change for South Africa between Q2 and Q3 of 2023.   (3)

4.3.4   Determine the probability (as a percentage) of randomly selecting a province in which the unemployment rate decreased from Q2 and Q3 of 2023.   (3)

[30]

QUESTION 5

5.1 David owns a home in Richards Bay and the family uses a Phase 1 (80A) electricity connection. Given below are the tariff rates for 2024/2025.

TABLE 5: UMHLATHUZE MUNICIPALITY ELECTRICITY TARIFFS

BLOCK	USAGE (kWh)	TARIFF RATE (c/kWh) VAT EXCLUSIVE
1	0 – 50	107,93
2	> 50 – 350	138,31
3	> 350 – 600	196,51
4	> 600 – 1 500	205,46
5	> 1 500	234,30

[Adapted from www.umhlathuze.gov.za]

***Monthly Service Fee Including VAT**: R417,72

Use the information above to answer the questions that follow.

5.1.1 Identify the maximum number of kWh in Block 2. (2)

5.1.2 Convert the tariff rate for Block 4 to rand/kWh. (2)

5.1.3 Calculate the monthly service fee charge excluding VAT. (3)

5.1.4 David stated that the total cost (including VAT) for using 687 kWh of electricity is R1 310.

Verify, showing ALL calculations, whether David's statement is VALID. (6)

5.1.5 David paid R825,91 including VAT to the municipality. Calculate the amount charged for electricity excluding the service fee and VAT. (3)

5.2 | Growth Charts are helpful in monitoring the growth pattern of a child or to monitor the fat levels in adults by using the Body Mass Index (BMI). ANNEXURE D shows the height (stature for age) and weight for age percentile curves for boys aged 2 to 20 years.

TABLE 6: NEW AND OLD BMI FORMULAE

Old Formula	New Formula
$\text{BMI} = \dfrac{\text{Weight in kg}}{(\text{Height in Metres})^2}$	$\text{BMI} = \dfrac{1,3 \times \text{Weight in kg}}{(\text{Height in Metres})^{2,5}}$

[Adapted from www.healthyweightforum.org]

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

5.2.1   Write down the height of a 2-year-old boy if his height is on 75th percentile curve. (2)

5.2.2   Identify the difference between the old formula and the new formula. (2)

5.2.3   An 18-year-old boy's weight and height are on the 50th and 10th percentile curves respectively. Determine the weight in kilograms and height in metres. (2)

5.2.4   A 15-year-old boy weighs 70 kg and is 1,65 m tall. Use both the old and new formulae given above to calculate the difference in the BMI. (6)

[28]

TOTAL: 150

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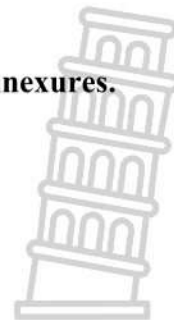
PREPARATORY EXAMINATION

ADDENDUM

SEPTEMBER 2024

This Addendum consists of 5 pages with 4 Annexures.

ANNEXURE A

QUESTION 2.1

TABLE 2: FACTOR TABLES FOR BOND/MORTGAGE REPAYMENT

Rate	Mortgage Bonds 10 Yrs	20 Yrs	25 Yrs	30 Yrs	Short Term Financing 36 Months	48 Months	60 Months
07,0%	11,61	07,75	07,07	06,65	30,88	23,95	19,08
07,5%	11,87	08,06	07,39	06,99	31,11	24,18	20,04
08,0%	12,13	08,36	07,72	07,34	31,34	24,41	20,28
08,5%	12,40	08,68	08,05	07,69	31,57	24,65	20,52
09,0%	12,67	09,00	08,39	08,05	31,80	24,89	20,76
09,5%	12,94	09,32	08,74	08,41	32,03	25,12	21,00
10,0%	13,22	09,65	09,09	08,78	32,27	25,36	21,25
10,5%	13,49	09,98	09,44	09,15	32,50	25,60	21,49
11,0%	13,78	10,32	09,80	09,52	32,74	25,85	21,74
11,5%	14,06	10,66	10,16	09,90	32,98	26,09	21,99
12,0%	14,35	11,01	10,53	10,29	33,21	26,33	22,24
12,5%	14,64	11,36	10,90	10,67	33,45	26,58	22,50
13,0%	14,93	11,72	11,28	11,06	33,69	26,83	22,75
13,5%	15,23	12,07	11,66	11,45	33,94	27,08	23,01
14,0%	15,53	12,44	12,04	11,85	34,18	27,33	23,27
14,5%	15,83	12,80	12,42	12,25	34,42	27,58	23,53
15,0%	16,13	13,17	12,81	12,64	34,67	27,83	23,79
15,5%	16,44	13,54	13,20	13,05	34,91	28,08	24,05
16,0%	16,75	13,91	13,59	13,45	35,16	28,34	24,32
16,5%	17,60	14,29	13,98	13,85	35,40	28,60	24,58

[Source:www.pkf.co.za]

ANNEXURE B
QUESTION 2.1.3

TABLE 3: BOND AND TRANSFER COSTS

ILLUSTRATIVE TABLE OF BOND AND TRANSFER COSTS										
	Transfer Costs						Bond Costs			
Price/Value/ Bond amount R	Transfer fee (Excl)	VAT @ 15%	Deeds Office Levy	Total	Transfer Duty	Total	Bond fee (Excl)	VAT @ 15%	Deeds Office Levy	Total
1 000 000,01	25 220	3 783,00	1 453	30 456,00	0	30 456,00	25 220	3 783,00	1 453	30 456,00
1 050 000,00	25 220	3 783,00	1 453	30 456,00	0	30 456,00	25 220	3 783,00	1 453	30 456,00
1 100 000,00	25 220	3 783,00	1 453	30 456,00	0	30 456,00	25 220	3 783,00	1 453	30 456,00
1 150 000,00	25 220	3 783,00	1 453	30 456,00	1 500	31 956,00	25 220	3 783,00	1 453	30 456,00
1 200 000,00	25 220	3 783,00	1 453	30 456,00	3 000	33 456,00	25 220	3 783,00	1 453	30 456,00
1 200 000,01	27 105	4 065,75	1 453	32 623,75	3 000	35 623,75	27 105	4 065,75	1 453	32 623,75
1 250 000,00	27 105	4 065,75	1 453	32 623,75	4 500	37 123,75	27 105	4 065,75	1 453	32 623,75
1 300 000,00	27 105	4 065,75	1 453	32 623,75	6 000	38 623,75	27 105	4 065,75	1 453	32 623,75
1 300 000,01	27 105	4 065,75	1 453	32 623,75	6 000	38 623,75	27 105	4 065,75	1 453	32 623,75
1 350 000,00	27 105	4 065,75	1 453	32 623,75	7 500	40 123,75	27 105	4 065,75	1 453	32 623,75
1 400 000,00	27 105	4 065,75	1 453	32 623,75	9 000	41 623,75	27 105	4 065,75	1 453	32 623,75
1 400 000,01	28 990	4 348,50	1 453	34 791,50	9 000	43 791,50	28 990	4 348,50	1 453	34 791,50
1 450 000,00	28 990	4 348,50	1 453	34 791,50	10 500	45 291,50	28 990	4 348,50	1 453	34 791,50
1 500 000,00	28 990	4 348,50	1 453	34 791,50	12 000	46 791,50	28 990	4 348,50	1 453	34 791,50
1 500 000,01	28 990	4 348,50	1 453	34 791,50	12 000	46 791,50	28 990	4 348,50	1 453	34 791,50
1 550 000,00	28 990	4 348,50	1 453	34 791,50	14 625	49 416,50	28 990	4 348,50	1 453	34 791,50
1 600 000,00	28 990	4 348,50	1 453	34 791,50	17 625	52 416,50	28 990	4 348,50	1 453	34 791,50
1 600 000,01	30 875	4 631,25	1 453	36 959,25	17 625	54 584,25	30 875	4 631,25	1 453	36 959,25
1 650 000,00	30 875	4 631,25	1 453	36 959,25	20 625	57 584,25	30 875	4 631,25	1 453	36 959,25

[Source: www.profmarkapp.co.za]

ANNEXURE C
QUESTION 4.3

UNEMPLOYMENT RATE BY PROVINCE: Q2 OF 2023 AND Q3 OF 2023

WC: -0,7%	NC: -0,6%	KZN: -1,6%	LP: -0,8%	GP: -0,7%	MP: -2,9%	FS: 1,8%	NW: 1,8%	EC: -0,9%

[Extracted from www.businesstech.co.za]

NSC Addendum

ANNEXURE D

QUESTION 5.2

2 to 20 years: Boys
Stature-for-age and Weight-for-age percentiles

NAME _____
RECORD # _____

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703

Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

[Extracted from www.kznhealth.gov.za]

FINAL

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**NATIONAL
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GRADE 12

MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

MARKING GUIDELINE

SEPTEMBER 2024

MARKS: 150

SYMBOL	EXPLANATION
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]   FULL MARKS ANSWER ONLY

Ques	Solution	Explanation	T & L
1.1.1	Discrete✓✓A	2A correct answer (2)	DH L1 E
1.1.2	Forty-nine thousand six hundred and twenty-eight rands.✓✓A	2A correct answer (2)	DH L1 E
1.1.3	R60 392; R61 408; R66 000; R66 358; R70 430; R74 620; R78 500; R79 860✓✓A	2A correct answer (2)	DH L1 E
1.1.4	University of KwaZulu Natal ✓✓	2RT reading from table (2)	F L1 E
1.1.5	27 610 = A − 45 390✓MA A = 27 610 + 45 390 A= 73 000✓A	1MA concept of range A correct answer (2)	F L1 D
1.1.6	Total Income = 187 × R84 060✓MA = R15 719 220✓A	1MA multiplying by 187 1A correct answer (2)	F L1 E
1.2.1	Amount carried over from February statement to the March statement from Nombuso's account.✓✓O	2O correct definition (2)	F L1 E
1.2.2	B = R74 040,44 − R3,80✓MA = R74 036,64✓A **OR** B = R79 236,64 - R5 200✓MA = R74 036,64✓A	1MA subtracting R3,80 1A correct answer **OR** 1MA subtracting R5 200 1A correct answer (2)	F L1 E
1.2.3	✓MA Total Cash Withdrawals = R1 800 + R 9 750,00 = R11 550✓A	1MA adding correct amounts 1A correct answer (2)	F L1 E
1.2.4	R43 000✓✓R	2R correct rounding (2)	F L1 E
1.2.5	✓A 52 : 5 200 1 : 100✓S	1A correct order 1S Simplification (2)	F L1 E
1.2.6	Difference = R 300,50 − R 1,20✓MA = R 299,30✓A	1MA subtracting correct values 1A correct answer (2)	F L1 E
1.3.1	93 petrol inland.✓✓RG	2RG reading from graph (2)	DH L1 E

1.3.2	Difference = R22,49 – R21,77✓MA = R0,72 or 72 cents✓A	1MA subtracting 1A answer. (2)	F L1 E
1.3.3	No mode✓✓A	2A correct answer (2)	DH L1 E
		[30]	

QUESTION 2 [32 MARKS]

2.1.1	3 bedrooms, 1 bathroom/shower, 1 garage and parking area for 3 cars✓✓A	2A any two features (2)	F L1 E
2.1.2	Monthly repayment = $\frac{R1\ 500\ 000 \times 10,16✓RT}{1\ 000✓SF}$ = R15 240✓CA	1RT for 10,16 1SF correct substitution 1CA answer (3)	F L2 M
2.1.3	Total = R46 791,50 + R34 791,50✓MA = R81 583✓CA	1MA adding 1CA answer (2)	F L2 E
2.1.4	Loan Amount = 105% × R1 500 000✓MA = R1 575 000✓A Total including transfer costs = R1 500 000 + R81 583✓MCA = R1 581 583✓CA Difference = R1 581 583 – R1 575 000✓MCA = R6 583✓CA Statement is INCORRECT.✓O	**CA from 2.1.3** 1MA multiplying by 105% 1A simplifying 1MCA adding 1CA simplifying 1MCA subtracting 1CA answer 1O opinion (7)	F L4 D
2.1.5	Monthly Repayment = $\frac{R1\ 575\ 000 \times 10,16}{1\ 000}$ = R16 002✓A ✓C Real Cost of the Loan = R16 002 × (25× 12)✓MCA = R4 800 600✓CA Interest = R4 800 600 – R1 575 000✓MCA = R3 225 600✓CA	1A simplifying 1C years to months 1MCA multiplying 1CA answer 1MCA subtracting 1CA answer (6)	F L3 D

2.1.6	✓MA $\frac{1}{20} \times$ R1 500 000 = R75 000✓A R81 583 > R75 000✓A His statement is VALID✓O **OR** $\frac{1}{20}$ = 0,05 $\frac{R81\ 583}{R1\ 500\ 000}$ ✓M = 0,05438866665✓C ✓A 0,05438866665 > 0,05 His statement is VALID✓O	**CA from 2.1.3** 1MA multiplying 1A simplifying 1A for > or greater than 1O opinion **OR** 1M for dividing by R1 500 000 1C conversion 1A for > or greater than 1O opinion (4)	F L4 D
2.2.1	Interest = 12% ÷ 2✓MA = 6 %✓A	1MA dividing by 2 1A correct answer (2) **AO**	F L2 E

2.2.2	Total Amount Year 1 = R7000 + (11,75% × R7 000)✓MA
	       = R7 000 + R822,50
	       = R7 822,50✓A
	
	      ✓MCA
	 Amount 1st 6 months = 7 822,50 + (6% × R7 822,50)
	
	       = R7 822,50 + R469,35 ✓MCA
	
	       = R8 291,85✓CA
	
	 Total 2nd 6 months = R8291,85 + (6 % × R8 291,85)
	
	       = R8 291,85 + R497,51
	       = R8 789,36✓CA
	
	 OR
	 Total Amount Year 1 = R7000 × 1,1175 ✓MA
	       = R7 822,50✓A
	
	      ✓MCA
	 Amount 1st 6 months = 7 822,50 × 1,06
	       = R8 291,85✓CA
	
	 Total 2nd 6 months = R8 291,85×1,06
	       = R8 789,36✓CA
		CA from Q2.2.1
		 1MA multiplying by 11,75%
		
		 1A answer
		
		 1MCA multiplying by 6 %
		
		 1MCA for adding interest
		
		 1CA for correct answer
		
		 1CA answer
		
		 1MA multiplying by 11,75%
		 1A answer
		
		 1MCA multiplying by 6 %
		
		 1CA for correct answer
		 1MCA multiplying by 6 %
		 1CA answer
		 (6)
			F
			 L3
			 M

		[32]	

QUESTION 3 [30 MARKS]			
3.1.1	Stacked bar graph✓✓A	2A correct answer (2)	DH L1 E
3.1.2	Male✓✓A	2A correct answer (2)	DH L1 E
3.1.3	Mean = $\frac{47,6\% + 41,8\% + 38,5\%✓MA}{3✓MA}$ = 42,63%✓A	1MA adding percentages 1MA dividing by 3 1A answer (3)	DH L2 E
3.1.4	Total = 445 330 + 319 372✓MA = 764 702✓A Percentage = $\frac{764\ 702}{389\ 400\ 000✓C} \times 100\%$ ✓MA ≈ 0,20 %✓A	1M adding tourists 1A simplifying 1MA % concept 1C for conversion 1A answer **NPR** (5)	DH L3 M
3.2.1	(A) F✓A (B) SADC✓A (C) F & SADC✓A	1A for F 1A for SADC 1A for F & SADC (3)	P L3 E
3.2.2	P(Tourist from SADC) = $\frac{2 ✓A}{6 ✓A}$ = $\frac{1}{3}$✓CA	**CA from Q3.2.1** 1A numerator 1A denominator 1CA answer (3)	P L2 E
3.3.1	51 g✓✓A	2A answer (2)	DH L1 E
3.3.2	52 g✓✓RG	2RG reading from graph (2)	DH L1 E
3.3.3	Range = 60 g – 46 g✓MA =14 g✓A IQR = Q3 – Q1 = 57g – 49g✓MA = 8g✓A Difference = 14 g – 8 g = 6 g✓CA	1MA subtracting 1A answer 1MA subtracting 1A answer 1CA correct answer (5)	DH L2 M

3.3.4	Type A✓A		DH
			L4
	25% of the tomatoes weigh more than that of type B and are larger with a maximum mass of 60 g✓✓J		D
		1A correct type	
	OR	2J correct answer	
	Type B✓A		
	25% of type A tomatoes weigh less than that of type B and are less than 49g ✓✓J	(3)	
		[30]	

QUESTION 4 [30 MARKS]

4.1.1	Percentage increase = $\frac{R27,58 - R25,42 \checkmark MA}{R25,42 \checkmark MA} \times 100\%$ $\approx 8,50\% \checkmark A$	1MA subtracting R25,42 from R27,58 1MA dividing by R25,42 1A answer **NPR** (3)	F L2 M
4.1.2	It provides a short-term relief.$\checkmark\checkmark$O	2O opinion (2)	F L4 E
4.1.3	Daily income: $8 \times R27,58 = R220,64\checkmark MA$ Monthly income = $5 \times 4,333 \times R220,64$ $\qquad\qquad\checkmark MA \qquad \checkmark MA$ $\qquad\qquad = R4\ 780,17\checkmark CA$ Her claim is VALID$\checkmark$O	1MA multiplying R27,58 by 8 1MA 5 days in a week 1MA multiplying R220,64 by 4,333 1CA correct answer 1O opinion (5)	F L4 D
4.2.1	Tax Free Amount = $\frac{1}{3} \times R3\ 240\ 000\checkmark MA$ $\qquad\qquad = R1\ 080\ 000\checkmark A$	1MA multiplying 1A answer (2)	F L2 E
4.2.2	$\qquad\qquad\quad \checkmark MA \qquad\qquad \checkmark SF$ Tax = $R39\ 600 + 27\% (R1\ 155\ 000 - R770\ 000)$ $\quad = R39\ 600 + R103\ 950\checkmark MA$ $\quad = R143\ 550$	1MA correct rate of tax 1SF substitution 1MA for R103 950 (3)	F L3 M
4.2.3	Taxable Amount = $R3\ 240\ 000 - R1\ 080\ 000\checkmark MCA$ $\qquad\qquad\qquad = R2\ 160\ 000\checkmark CA$ $\qquad\quad \checkmark A \qquad\qquad\qquad \checkmark SF$ Tax = $R143\ 550 + 36\% (R2\ 160\ 000 - R1\ 155\ 000)$ $\quad = R505\ 350\checkmark CA$	**CA from 4.2.1** 1MCA subtracting 1CA answer 1A correct tax rate 1SF substitution 1CA answer (5)	F L3 M
4.3.1	$2\checkmark\checkmark RG$	2RG reading from graph (2)	DH L1 E
4.3.2	Increase in technology results in a decline in a need for labour force.$\checkmark\checkmark A$	2 A correct answer (2)	DH L4 E
4.3.3	$\qquad\qquad\qquad \checkmark RT$ Unemployment Rate Change = $31,9\% - 32,6\%\checkmark MA$ $\qquad\qquad\qquad = -0,7\%\checkmark A$	1RT both correct values 1MA subtracting 1A answer (3)	DH L2 M
4.3.4	P(Decrease in Unemployment Rate) = $\frac{7\checkmark A}{9\checkmark A} \times 100\%$ $\qquad\qquad = 77,78\%\checkmark CA$	1A for 2 1A for 9 1CA answer **NPR** (3)	DH L2 M
		[30]	

QUESTION 5 [28 MARKS]			
5.1.1	300 kWh✔✔A	2A answer (2)	F L1 E
5.1.2	Tariff rate = 205,46/kWh ÷ 100✔MA = R2,0546/kWh✔A	1MA conversion 1A correct answer (2)	F L2 E

5.1.3	✔RT
	Amount excluding VAT = R417,72 ÷ 115%✔MA
	            = R363,23✔A
	
	OR
	
	✔RT
	Amount excluding VAT = R417,72 × $\frac{100}{15}$✔MA
	            = R363,23✔A
	
	OR
	
	✔RT
	Amount excluding VAT = R417,72 ÷ 1,15✔MA
	            = R363,23✔A
		1RT for R417,72
		1MA dividing by 115%
		1A answer
		
		OR
		
		1RT for R417,72
		1MA multiplying by $\frac{100}{15}$
		1A answer
		
		OR
		
		1RT for R417,72
		1MA dividing by 1,15
		1A answer
		
		(3)
			F
			L2
			M

5.1.4	687 kWh = 50 kWh + 300 kWh + 250 kWh + 87 kWh
	
	Charge = 50(1,0793) + 300(1,3831) + 250(1,9651) + 87(2,0546)✔MA
	     = R1 138,9202✔A
	
	Amount including VAT = 115% × R1 138,9202✔MA
	            = R1 309,76+ R417,72✔MA
	
	            = R1 727,48✔CA
	
	Statement is INVALID✔O
	
	OR
	
	687 kWh = 50 kWh + 300 kWh + 250 kWh + 87 kWh
	
	Charge = 50(1,0793) + 300(1,3831) + 250(1,9651) + 87(2,0546)✔MA
	     = R1 138,9202✔A
	
	VAT: 15% × R1 138,9202 = R170,84✔A
	
	Amount including VAT = R1 138,9202 + R170,84 + R417,72✔MA
	
	            = R1 727,48✔CA
	
	Statement is INVALID✔O
		1MA multiplying by rates
		1A correct answer
		1MA multiplying by 115%
		1MA adding
		
		1CA answer
		1O opinion
		
		OR
		
		1MA multiplying by rates
		1A correct answer
		1A for VAT
		1A for R1 309,76
		1MA adding
		
		1CA answer
		
		1O opinion
		
		(6)
			F
			L4
			D

5.1.5	Amount excluding Service fee = R825,91 – R 417,72✓MA Amount excluding VAT = R408,19 ÷ 1,15✓MA = R354,95✓CA (3)	1MA for subtracting R417,72 1MA dividing by 1,15 1CA answer	F L3 M
5.2.1	89 cm✓✓RG (2)	2RG reading from graph	DH L2 E
5.2.2	Weight is multiplied by 1,3 in the new formula✓A Height is to the power 2,5 in the new formula✓A (2)	1A for 1,3 1A for 2,5	DH L2 M
5.2.3	Weight = 67 kg✓RG Height = 1,67 m✓RG (2)	1RG reading from graph 1RG reading from graph	DH L2 M
5.2.4	Old Formula: BMI = $\dfrac{70kg}{(1,65\ m)^2}$ ✓SF = 25,71 kg/m² ✓A New Formula: BMI = $\dfrac{1,3 \times 70kg}{(1,65\ m)^{2,5}}$ ✓SF = 26,02 kg/m² ✓A Difference = 26,02 – 25,71 ✓MCA = 0,31 kg/m² ✓CA (6)	1SF substitution 1A answer 1SF substitution 1A answer 1MCA subtraction 1CA answer	F L3 M
		[28]	
		TOTAL MARKS: 150	