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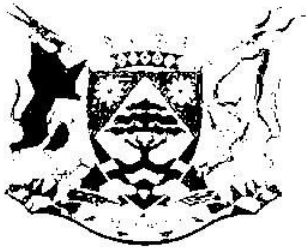
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**PROVINSIALE VOORBEREIDENDE EKSAMEN/
PROVINCIAL PREPARATORY EXAMINATION**

GRAAD/GRADE 12

MATHEMATICAL LITERACY

PAPER 1

SEPTEMBER 2024

PUNTE/MARKS: 150

TYD/TIME: 3 uur/hours

**Hierdie vraestel bestaan uit 15 bladsye en 'n addendum van 4 bladsye./
This question paper consists of 15 pages and an addendum of 4 pages.**



INSTRUCTIONS AND INFORMATION

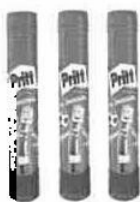
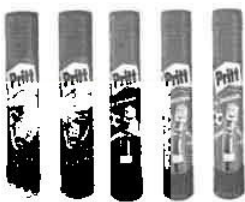

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:

ANNEXURE A for QUESTION 2.1
ANNEXURE B for QUESTION 3.2
ANNEXURE C for QUESTION 4.1
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. Write neatly and legibly.

QUESTION 1

- 1.1 Takealot.com is the leading e-commerce retailer in South Africa. TABLE 1 below shows specials from the Takealot.com website.

TABLE 1: SPECIALS AT TAKELOT.COM
(ALL PRICES INCLUDE 15% VAT)

		
PRITT GLUE STICK 43 g × 3 PACK	PRITT GLUE STICK 43 g × 5 PACK	TREELINE GLUE STICK (36 g) non toxic – box of 12
Special price: R179,00	Special price: R301,00	Special price: R179,00
Normal price: R199,00	Normal price: R429,00	Normal price: R191,00

DELIVERY COST:

Standard Delivery (orders below R500)	R70,00
Standard Delivery (orders R500 or more)	FREE
Next Business Day Delivery * (orders R700 or more)	R75,00
Next Business Day Delivery * (orders below R700)	R90,00

**Premium delivery only available in Main Centres (Cape Town, KwaZulu-Natal, Johannesburg & Pretoria)*

NOTE: E-commerce is the trading of goods and services on the Internet.

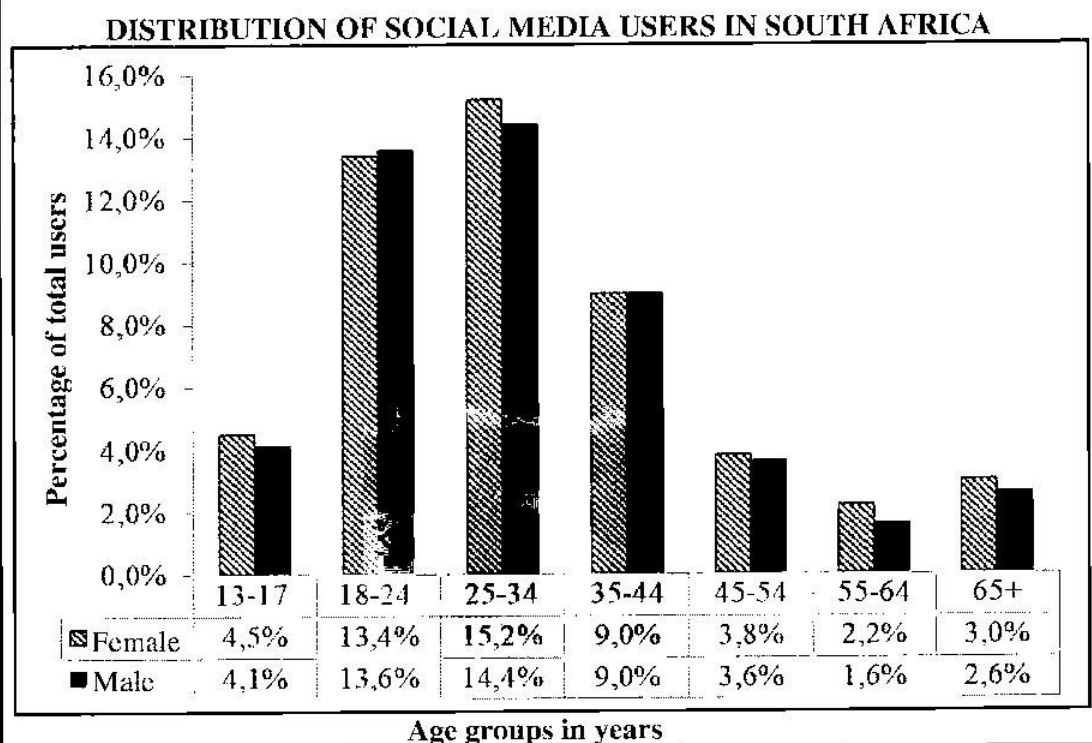
[Adapted from www.takealot.com]

Use TABLE 1 to answer the questions that follow.

- 1.1.1 Calculate the discount amount (in rand) on a 5 pack Pritt Glue Stick. (2)
- 1.1.2 The probability of purchasing the Pritt glue stick 43 g × 3 pack is $\frac{1}{3}$.
Write this probability as a decimal. (2)
- 1.1.3 Calculate the special price for ONE Treeline Glue Stick. (3)
- 1.1.4 Write down the standard delivery cost for an order of R700. (2)
- 1.1.5 Mrs Gouws wants to buy a Treeline Glue Stick for each learner in her class of 27.
Calculate the number of boxes she needs to buy. (2)

1.2

The total population of South Africa on 8 April 2024 was 60 880 156, of which 26 056 706 were social media users. The graph below shows the distribution of social media users in South Africa, by age group and gender.

[Adapted from www.statista.com]

Use the graph to answer the questions that follow.

- 1.2.1 Write down the total number of social media users in South Africa on 8 April 2024 in words. (2)
- 1.2.2 Identify the age group in which the percentage male social media users outnumber the female users. (2)
- 1.2.3 Calculate the total percentage of participants aged 45 years and older. (3)
- 1.2.4 Determine the difference in percentage between the largest percentage males and smallest percentage males. (2)

1.3

An analysis of the average house selling prices across South Africa by the Seeff Property Group reveals that nine out of the top 10 of the most expensive suburbs are in Cape Town.

TABLE 2 below listed the top 10 most expensive suburbs in South Africa.

**TABLE 2: TOP 10 MOST EXPENSIVE SUBURBS IN SOUTH AFRICA
(PRICES IN MILLION RAND)**

	SUBURB	AREA	AVERAGE PRICE	HIGHEST PRICE ACHIEVED
1	Clifton	Atlantic Seaboard	25	150
2	Bantry Bay	Atlantic Seaboard	22	60
3	Llandudno	Atlantic Seaboard	19,95	33
4	Sandhurst	Sandton	A	54
5	Bishopscourt	Southern Suburbs	17,55	90
6	Higgovale	City	16,2	33
7	Waterfront	Atlantic Seaboard	15,25	54
8	Fresnaye	Atlantic Seaboard	15	71,25
9	Camps Bay	Atlantic Seaboard	14,8	42
10	Constantia Upper	Southern Suburbs	13,1	70

[Adapted from <https://businesstech.co.za>]

Use TABLE 2 to answer the questions that follow.

- 1.3.1 Write down the highest price achieved for a house in Fresnaye in full, using only numerals. (2)
- 1.3.2 Calculate the value of A if the average price in Sandton is 35,5% of the highest price achieved in Sandton. (2)
- 1.3.3 Write down as a simplified ratio the highest price achieved in the Southern Suburbs to the highest price achieved in the Atlantic Seaboard area. (3)
- 1.3.4 Determine the number of suburbs where the highest price achieved is above R60 000 000. (2)

[29]



QUESTION 2

2.1

The Johnson family consisting of Mr and Mrs Johnson aged 43 and 46 respectively, three children aged 13, 15 and 17, and a grandmother aged 65, planned to visit Table Mountain in Cape Town.

ANNEXURE A shows ticket prices for the cable car at Table Mountain.

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

2.1.1 Calculate the number of people in the Johnson family that planned to visit Table Mountain. (2)

2.1.2 Calculate the percentage increase (rounded to the nearest percentage) in a student's return ticket price.

You may use the following formula:

$$\text{Percentage increase} = \frac{\text{ticket price 2024} - \text{ticket price 2023}}{\text{ticket price 2023}} \times 100\% \quad (4)$$

2.1.3 The family visited Table Mountain on Tuesday, 15 August 2024 after 13:00. They bought one-way tickets for all the children and return tickets for the adults.

Mr Johnson calculated that if the family visited Table Mountain five hours earlier that morning, the total cost for the tickets would have been R1 365.

Determine the amount the family have saved on the total cost of all the tickets by visiting Table Mountain in the afternoon compared to a visit at 8:00. (8)

2.1.4 Provide a reason why students often pay less than adults. (2)



2.2

Loadshedding is a reality in South Africa. Mr Johnson decides to invest in solar panels.

Given below is an advertisement for the solar panel system he intends to buy.

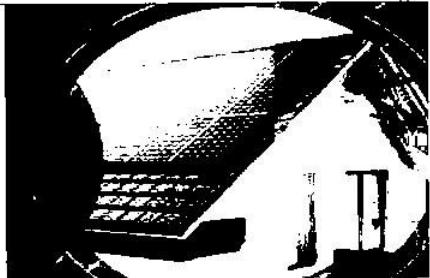
	Versofy SOLAR
	12 Panel system + Hybrid Inverter 25 kwh–28 kwh/day
	NOW R224 660
	WAS R? SAVE R14 340

TABLE 3 show the payment options for the solar panel system.

TABLE 3: PAYMENT OPTIONS

CASH PRICE:	R224 660 (including 15% VAT)
HIRE-PURCHASE:	
Deposit	R26 960
Monthly admin fee (not included in monthly instalment)	R105
Term agreement	60 months
Monthly instalment	R5 400

[Adapted from www.versofy.com]

Use the information above to answer the questions that follow.

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

2.2.2 Calculate the VAT amount included in the cash price. (3)

2.2.3 Calculate the total cost of the solar panel system if he decides to use the hire-purchase option.

You may use the following formula:

Total cost = Deposit + total value of monthly instalments + admin fees (6)

2.2.4 Mr and Mrs Johnson will divide the monthly instalment of R5 400 in the ratio 5 : 3 respectively. Mr Johnson claims that his portion exceeds his wife's contribution by more than R1 300.

Verify, showing ALL calculations, whether his claim is valid. (6)

[33]

QUESTION 3

3.1

Globally, South Africa is the ninth largest producer and the fifth largest exporter of table grapes.

TABLE 4 below shows the regional production of table grapes in hectare per region in South Africa from 2018 to 2023.

TABLE 4: REGIONAL PRODUCTION OF TABLE GRAPES IN SOUTH AFRICA (PER HECTARE)

REGION	2018	2019	2020	2021	2022	2023
Northern Provinces	2 096	2 589	2 522	2 575	2 358	2 051
Orange River	6 147	6 195	5 857	5 626	5 768	5 778
Olifants River	1 318	1 185	A	1 168	1 184	1 145
Berg River	5 109	5 210	4 934	4 789	4 674	4 774
Hex River	6 397	6 619	6 563	6 406	6 394	6 240
GRAND TOTAL	21 067	21 798	21 100	20 564	20 378	19 988

[Adapted from www.satgi.co.za]

Use TABLE 4 to answer the questions that follow.

- 3.1.1 Calculate A, the total hectare table grapes produced in the Olifants River region in 2020. (2)
- 3.1.2 Identify the regions with an increase in production of table grapes from 2022 to 2023. (2)
- 3.1.3 State ONE type of graph that can be used to represent the data in TABLE 4. (2)
- 3.1.4 Calculate the median number of hectare production in the Orange River region from 2018 to 2023. (4)
- 3.1.5 Describe the trend in the total production of table grapes in South Africa from 2018 to 2023. (2)



3.2

The table grape industry provides several job opportunities in South Africa.

ANNEXURE B shows the total number of employees per region in South Africa in 2022/2023. Some of the values have been omitted.

Use ANNEXURE B to answer the questions that follow.

3.2.1 The total number of workers in the Orange River region is 34 268.

Show how this total number was calculated. (2)

3.2.2 Name the region with the second highest number of female seasonal workers. (2)

3.2.3 The mean total number of employees is 20 343.

Calculate the value of Z , the total number of employees in the Berg River region. Show all calculations. (4)

3.2.4 Determine (rounded to 2 decimal places) the probability of randomly selecting a male seasonal employee from the Orange River or the Hex River region from all the seasonal employees in the five regions. (5)

[25]

QUESTION 4

4.1

Rudi started his own business by selling hamburgers at sporting events in Kimberley.

He rented a mobile kitchen trailer from his father. The rental cost is R180 per day. He also asked his friend Neil, to help him with the preparation of the hamburgers. He pays Neil R250 per day.



ANNEXURE C shows the prices of all the ingredients for the hamburgers from three different stores.

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

4.1.1 Calculate the total fixed cost for one day. (2)

4.1.2 Rudi purchased his ingredients for the hamburgers from various stores.

He bought the patties and the butter from Food and More and the cheese from Makro.

The total variable cost to make ONE hamburger is R14,00.

Determine, by showing ALL calculations, from which store he purchased the bread rolls. (7)

4.1.3 Rudi sold the hamburger at R25,00 per hamburger.

Rudi claims that he will make more than 80% profit on one hamburger.

Verify, by showing ALL calculations, if his claim is valid. (5)

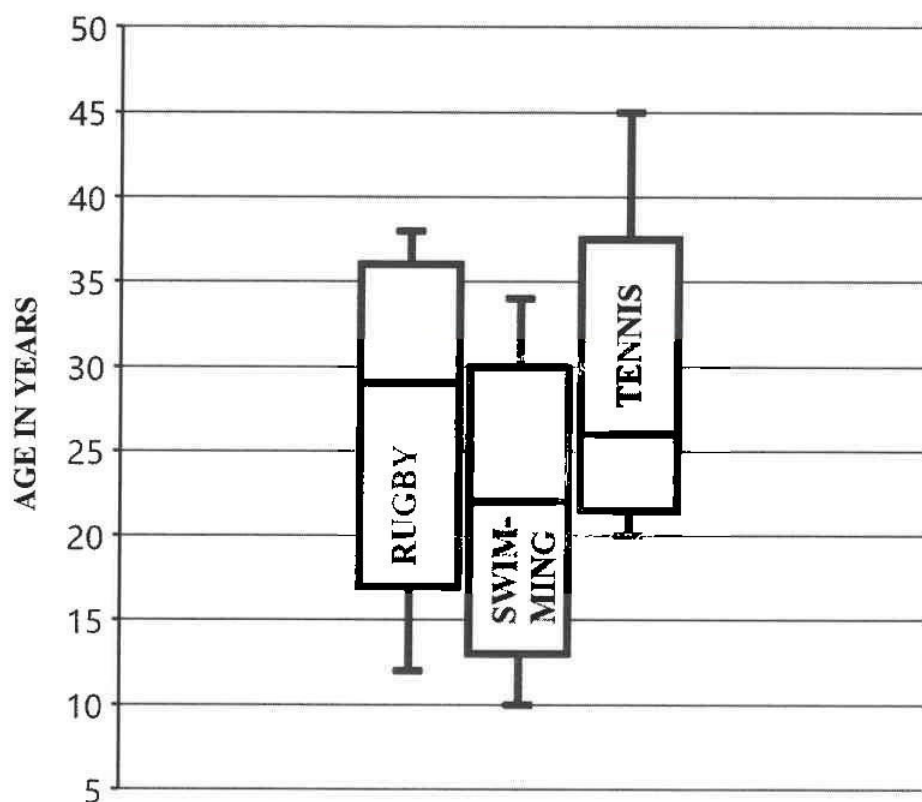
4.2

Rudi used a questionnaire to determine the age of his clients at three different sport events in Kimberley. His findings were summarized in the box and whisker diagram below.

The total number of clients at each sporting event is given below.

Rugby game: **254** Swimming gala: **176** Tennis tournament: **84**

BOX AND WHISKER DIAGRAM OF THE AGE DISTRIBUTION OF RUDI'S CLIENTS AT THE THREE SPORTING EVENTS



[Adapted from www.statkingdom.com]

Use the information above to answer the questions that follow.

4.2.1 Determine the sport event with the oldest client. (2)

4.2.2 Determine the difference in the median age of the clients at the rugby game and the swimming gala. (4)

4.2.3 Calculate the inter quartile range of the age of the clients at the rugby game.

You may use the formula:

$$\text{IQR} = Q3 - Q1 \quad (4)$$


4.2.4 Calculate the number of clients at the tennis tournament aged 37,5 years or older. (3)



September 2024

4.3

Below is a bank statement of Linda Talmakkies, Rudi's wife, for 19 May 2024 to 19 June 2024.

<div>  DIAMAND BANK LTD. Hopetown </div> <div> Customer Care Centre: 086 032 4600 e-mail: Transact@diamandbank.co.za </div>					
<div> L TALMAKKIES PO BOX 66 HOPETOWN 8750 </div> <div> Statement from 19 May 2024 to 19 June 2024 </div> <div> 19 June 2024 </div>					
Details	Service Fee	Debits	Credits	Date	Balance
BALANCE BROUGHT FORWARD				19 May	33 804,02-
VOD PREPAID 0845152833		110,00-		22 May	33 914,02-
BOND		6 095,41-		25 May	40 009,43-
AUTO BANK DEPOSIT			1 900,00	27 May	38 109,43-
FIXED MONTHLY FEE	#	195,00-		29 May	38 304,43-
SALARY			B	31 May	5 206,91
IB PAYMENT EDGARS		450,00-		3 Jun	4 756,91
DEBIT CARD PURCHASE: AGAUTO		560,92-		9 Jun	4 195,99
DEBIT CARD PURCHASE: SPAR		2 115,60-		7 Jun	2 080,39
STATEMENT COST	#	38,35-		11 Jun	2 042,04
BALANCE CARRIED FORWARD				19 Jun	2 042,04

Use the information above to answer the questions that follow.

4.3.1 Determine the date on which Linda's bank balance was the lowest. (2)

4.3.2 Determine the salary (B) paid into Linda's account on 31 May 2024. (3)

[32]

QUESTION 5

5.1

Mr Nkosi, 47 years old, earned a yearly taxable income of R455 400 for the 2023/24 tax year.

During the 2023/24 tax year, Mr Nkosi was a member of a medical aid that covered himself, his wife and two children.

TABLE 5 below shows the tax table, the tax rebates and medical aid credits for the 2023/24 tax year. Some of the values are omitted.

TABLE 5: TAX RATES FOR 2023/24 TAX YEAR

TAX BRACKET	TAXABLE INCOME (R)	RATES OF TAX (R)
1	1 – 237 100	18% of taxable income
2	237 101 – 370 500	42 678 + 26% of taxable income above 237 100
3	370 501 – 512 800	77 362 + 31% of taxable income above 370 500
4	512 801 – 673 000	121 475 + 36% of taxable income above 512 800
5	673 001 – 857 900	179 147 + 39% of taxable income above 673 000
6	A – 1 817 000	251 258 + 41% of taxable income above 857 900
7	1 817 001 and above	644 489 + 45% of taxable income above 1 817 000

TAX REBATES AND MEDICAL AID CREDITS FOR THE 2023/24 TAX YEAR

TAX REBATE	
Primary	R17 235
Secondary (65 and older)	R9 444
Tertiary (75 and older)	R3 124

MEDICAL CREDITS PER MONTH FOR MEDICAL FUND MEMBERS	
Main member	R364
First dependent	R364
Each additional dependent	R246

[Adapted from www.sars.gov.za]

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

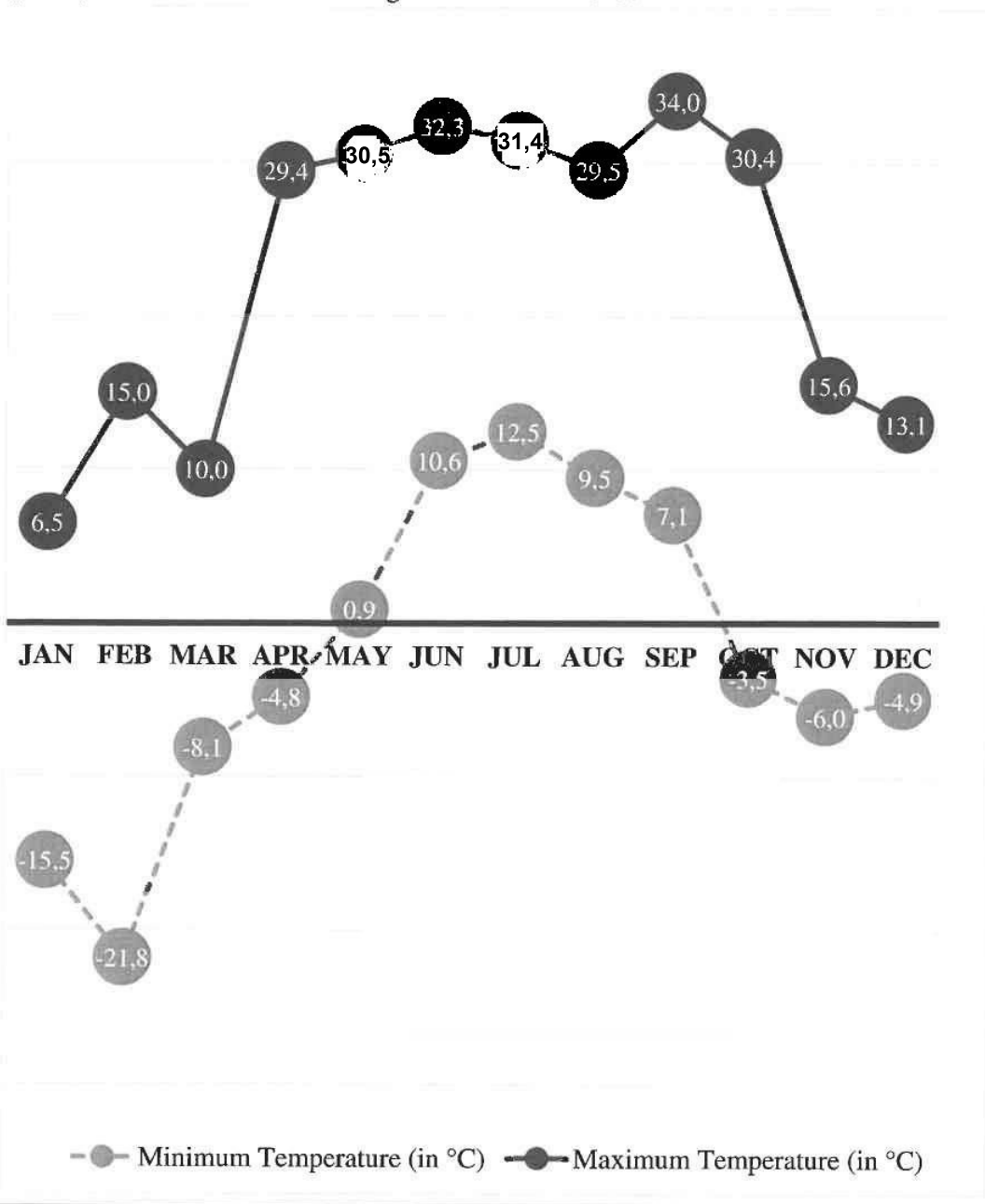
- 5.1.1 Write down the government department responsible for administration of personal income tax. (2)
- 5.1.2 Determine the value of A, the minimum taxable income in tax bracket 6. (2)
- 5.1.3 Calculate Mr Nkosi's annual medical tax credits. (4)
- 5.1.4 Mr Nkosi claims that his monthly tax for the 2023/24 tax year is more than $\frac{1}{6}$ of his monthly taxable income. (8)
- Verify, showing ALL calculations, if this statement is correct.

5.2

Mr Nkosi wants to take his family on a trip to Toronto in Canada.

He searched the internet for information about the temperature in Toronto during different times of the year.

The graph below shows the highest maximum and lowest minimum temperature (in °C) recorded in Toronto during each month in 2023.



[Adapted from www.toronto.weatherstats.ca]

Use the information above to answer the questions that follow.

5.2.1 Determine the modal temperature (in °C) in Toronto during 2023. (2)

5.2.2 Calculate the range of the minimum temperatures (in °C) in Toronto during 2023. (3)

5.3

Mr Nkosi received a quotation for the holiday accommodation in Toronto in Canada. The cost is CAD 85,45 per person per night. The Nkosi family, consisting of 4 persons, has budgeted ZAR 28 000 for accommodation in Toronto.

TABLE 6 show the exchange rates for four countries.

TABLE 6: EXCHANGE RATES ON 21 FEBRUARY 2024

CURRENCY	UNITS PER ZAR	ZAR PER UNIT
Euro	0,048962	20,424176
Canadian Dollar	0,071526	13,980936
Japanese Yen	7,93508628	Z
British Pound	0,041920	23,854921

CAD: Canadian Dollar

ZAR: South African Rand

[Adapted from www.forbes.com]

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

5.3.1 Identify the currency which is the second strongest against the South African Rand. (2)

5.3.2 Calculate the value of the exchange rate **Z**. (2)

5.3.3 Mr Nkosi claims that their budgeted amount for accommodation is sufficient for 6 nights' stay in Toronto.

Verify, showing ALL calculations, if this statement is correct. (6)

[31]

TOTAL: 150