EXAMINATION	NATIONAL SENIOR CERTIFICATE
GRADE	12
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PAPER	1
MARK TOTAL	150
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SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE

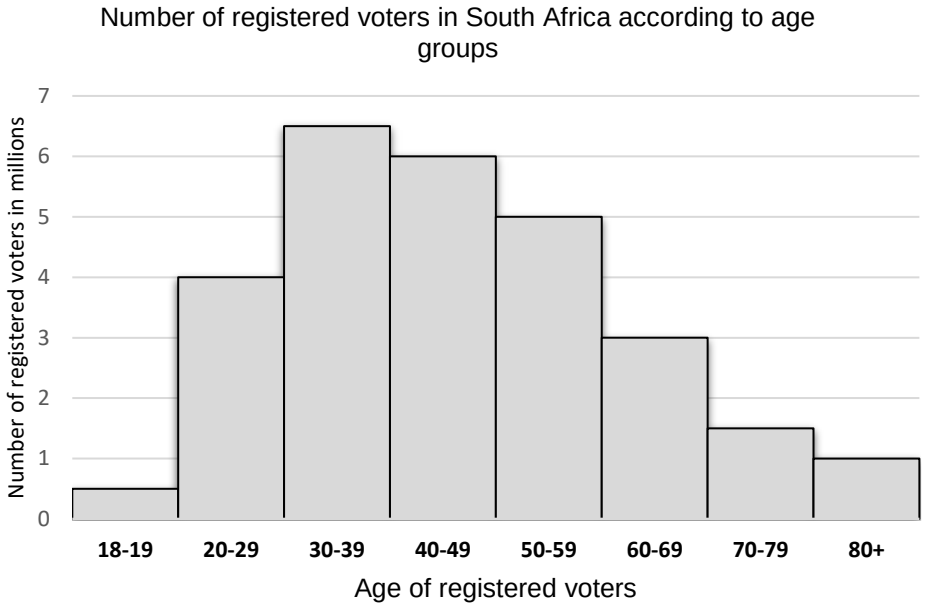
SUID-AFRIKAANSE KOMPREHENSIEWE ASSESSERINGSINSTITUUT

INSTRUCTIONS AND INFORMATION

1. This question paper consists of **4** questions.
2. Answer **ALL** the questions.
3. Number the answers according to the numbering system used in the question paper.
4. Start each question on a new page.
5. An approved non-programmable and non-graphical calculator may be used.
6. Show **ALL** calculations clearly.
7. Round **ALL** final answers off according to the context, unless stated otherwise.
8. Indicate **ALL** units where applicable. Units **MUST** be shown in final answers.
9. Diagrams are **NOT** necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly, in **BLUE** ink only.

QUESTION 1

1.1 In South Africa, 2024 was an election year where the citizens of the country had the opportunity to vote for the political party of their choice in the national general elections. The graph below shows the number of registered voters, in millions, in the country according to different age groups.



[Source adapted from: https://www.statista.com]

Use the information given above to answer the questions that follow.

1.1.1 What type of graph is used to represent the data above? (2)

1.1.2 The age of the registered voters can be described as the... Write down **only** the correct letter.

A	Dependent variable
B	Independent variable
C	Constant variable

(2)

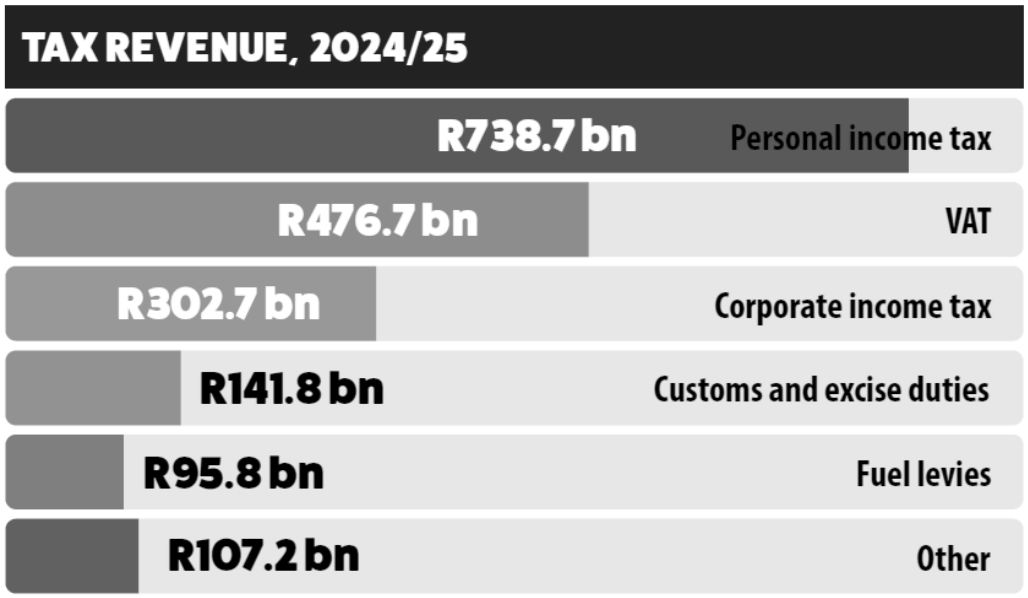
1.1.3 State whether the following statement is **TRUE** or **FALSE**. *"The first age group starts at 18 and not at 10, the reason for this is that you are only allowed to register as a voter in the elections once you are 18 years old."* (2)

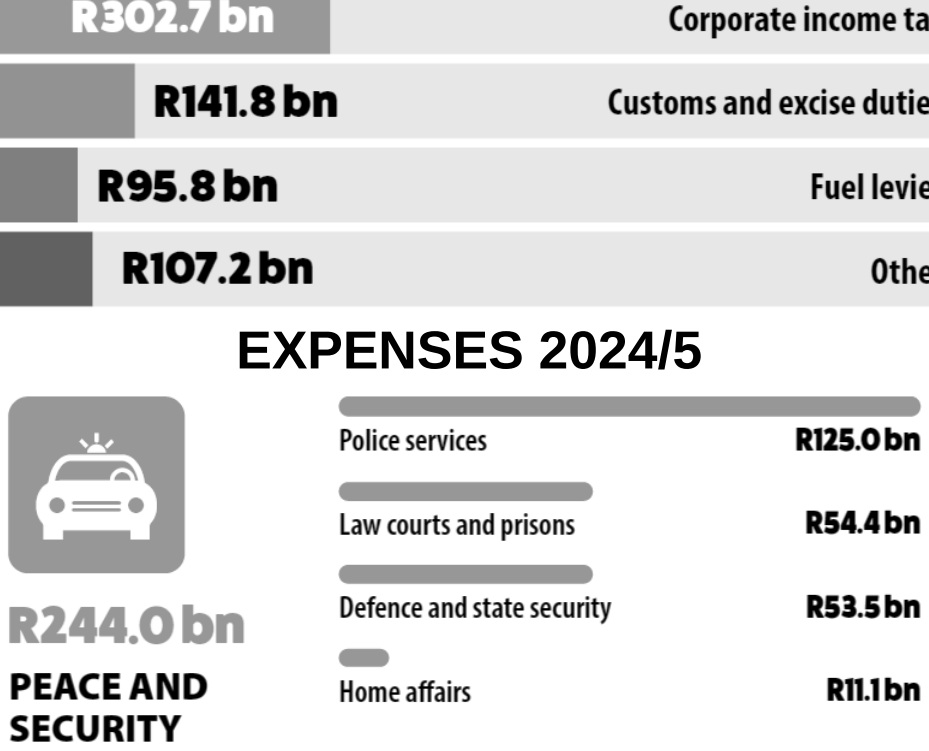
1.1.4 Determine which age group represents the modal age group. (2)

1.1.5 State whether the following statement is **TRUE** or **FALSE**. *"More than five million registered voters are below the age of thirty."* (2)

1.1.6 Write down the number of registered voters between the ages of 30 and 39 in words. (2)

1.2 The national treasury summarised some of the following highlights with regards to the 2024/25 budget.





[Source adapted from: https://www.timeslive.co.za/politics/2024-02-21-budget-2024]

Use the information given to answer the questions that follow.

1.2.1 Name the smallest PEACE and SECURITY expense. (2)

1.2.2 Write down the budgeted amount for Provincial Hospital Services. (2)

1.2.3 What does the acronym VAT stand for? Write down **only** the correct letter.

A	Value Added Tax
B	Variable Added Tax
C	Value Advised Tax

(2)

1.2.4 Determine the government's biggest source of revenue. (2)

1.2.5 The budgeted amount for Home Affairs is given as R11,1bn. How is this amount written as a number? Choose the correct option from the list given below. Write down **only** the correct letter.

A	11 100 000
B	11 100 000 000
C	11 100 000 000 000

(2)

1.2.6 State whether the following statement is **TRUE** or **FALSE**. *"Police services is 51% of the total amount allocated to Peace and Security."* (2)

1.2.7 Name the second largest health expense. (2)

1.2.8 State whether the following statement is **TRUE** or **FALSE**.
"Every person in South Africa that earns an income MUST pay personal income tax." (2)

[28]

QUESTION 2

2.1 Dr West works in a hospital in the Western Cape and earns a gross monthly salary of R75 340. She is 63 years old and is the main member of a medical aid with one dependent. She contributes R4 520 monthly to a pension fund. The 2024 tax table is shown below:

2024 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	857 901 – 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	
Primary	R17 235
Secondary (65 years and older)	R9 444
Tertiary (75 years and older)	R3 145

Tax Thresholds	
Age	**Tax Threshold**
Below age 65	R95 750
Age 65 to below 75	R148 217
Age 75 and over	R165 689

Medical Tax Credit Rates (per month)	
For the taxpayer	R364
For first dependent	R364
For each additional dependent	R246

[Source adapted from: https://www.sars.gov.za/]

Use the information above to answer the questions that follow.

2.1.1 Calculate the percentage of Dr West's gross monthly income she contributes towards the pension fund. (3)

2.1.2 Calculate Dr West's annual taxable income. (5)

2.1.3 Dr West claims that she will receive medical tax credits to the value of R8 736 for the 2024 financial year. Verify, by showing all calculations, whether her claim is valid. (4)

2.1.4 Calculate the monthly income tax payable by Dr West. (7)

2.1.5 James, 21 years old, is a newly employed junior janitor at the hospital. James earns a gross monthly salary of R7 950.
Explain why PAYE, pay as you earn, is not deducted from his salary each month. (3)

2.2 Dr West is interested in buying a new car. She comes across the following advertisement:

Deposit	Interest Rate	Term	Loan Amount	Monthly Instalments	Total Payment
12%	11,75%	72 months	**A**	R10 377,56	**B**

[Source adapted from: www.durbansouthtoyota.co.za/specials]

Use the information given in the advertisement to answer the questions that follow.

2.2.1 Determine the amount that needs to be paid for the deposit. (3)

2.2.2 For how many years will Dr West be paying instalments? (2)

2.2.3 Calculate the loan amount, **A**. (2)

2.2.4 Choose the formula that could be used to determine the total payment, **B**. Write down **only** the correct letter.

A	Monthly instalments x 72 - deposit
B	Deposit + monthly instalments ÷ 72
C	Deposit + monthly instalments x 72

(2)

2.2.5 By using your answer from QUESTION 2.2.4, determine the total amount Dr West will pay for this car if she doesn't pay cash for it. (2)

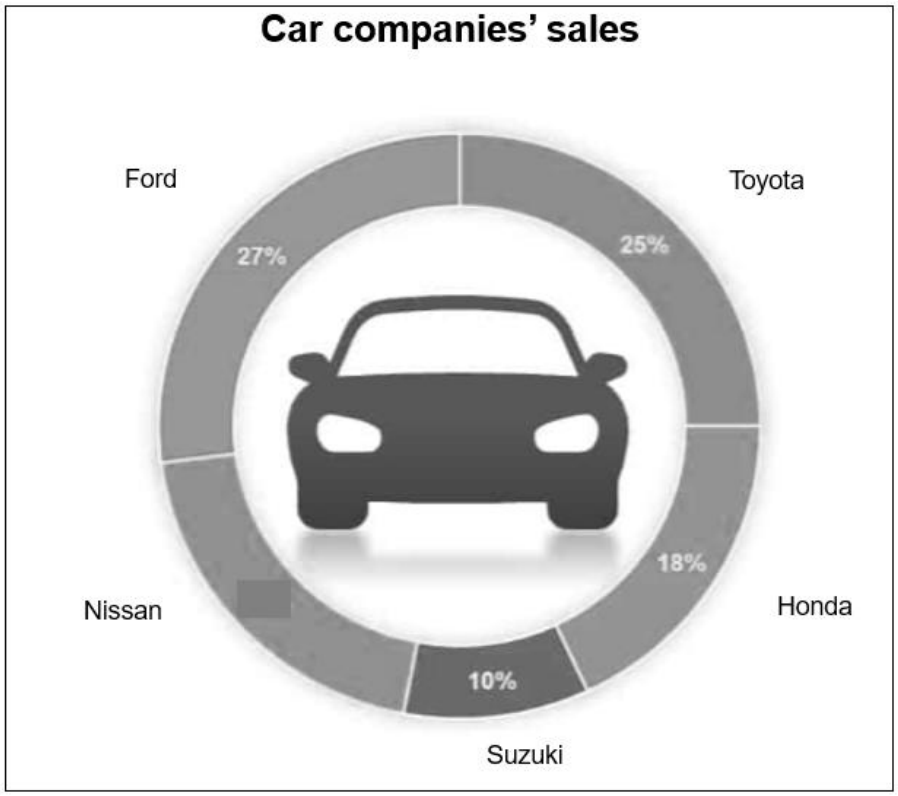
2.2.6 Explain what would happen to the total amount payable if the interest rate was given as 10,75%. Give a reason for your answer. Also, indicate whether this change in the interest rate would have a positive or negative effect on the monthly instalments, resulting in an increase or decrease in the monthly instalment. (4)

2.2.7 During the month of May, this dealership sold 140 Cross XR Hybrids. 60 of these cars were silver, 27 were blue and the rest were white. Determine, as a decimal number, the probability that Dr West bought a white car. (3)

[40]

QUESTION 3

3.1 The pie chart below shows the sales distribution pattern of different car companies. Car manufacturers can use this data to show the amount of competition that they are facing from the other competitors. In total, 456 000 cars were sold during the data collection period.



Note: None of the cars that formed part of this study used run flat tyres.

[Source adapted from: https://slidebazaar.com/items/car-companies-sales]

Use the information given above to answer the questions that follow.

3.1.1 Determine the percentage of Nissan cars that were sold. (2)

3.1.2 Identify two car companies whose combined number of cars sold make up more than half of the total number of cars sold. (2)

3.1.3 Of all the Hondas sold, 35% are classified as sedans. How many Honda sedans were sold? (4)

3.1.4 Suzuki car company spent R17 687 600 on batteries for their cars that were sold. How much does Suzuki pay for one battery? (4)

3.1.5 Calculate how many tyres in total would have been ordered and used during the data collection period. (2)

3.2 The table below shows the sales per dealership of 14 different car dealerships across South Africa:

90	67	52	87	**A**	48	**B**
89	**B**	105	125	135	63	52

[Source adapted from: https://slidebazaar.com/items/car-companies-sales]

Use the information given in the table to answer the questions that follow.

3.2.1 The range of these sales is 120. Calculate the value of **A** which is the lowest sales number. [Note: **B** represents the same value for some dealerships and is not the highest sales number.] (3)

3.2.2 The mean for the set of data is 74. Calculate the value of **B**. (4)

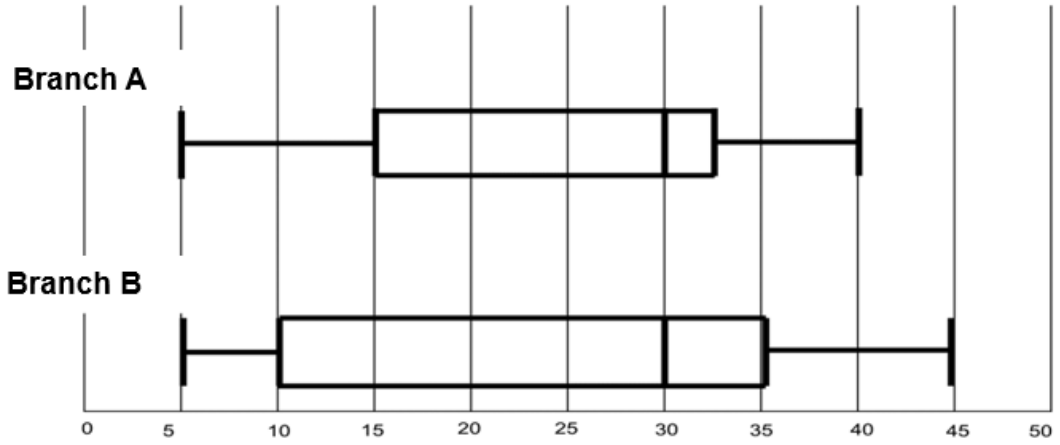
3.2.3 Arrange the data in ascending order. (2)

3.2.4 Determine the median of the given set of data. (3)

3.2.5 Calculate, as a percentage, the probability that a dealership chosen at random, sold more than 100 cars. (3)

3.2.6 By making use of words like categorical/numerical/continuous/discrete data, define the type of data represented in the above table. Give a reason why you have chosen the word/s you have used. (3)

3.3 The owner of one of the dealerships counted how many cars two of the branches sold in one financial year. He then drew box-and-whisker diagrams to illustrate this information.



[Source adapted from: https://slidebazaar.com/items/car-companies-sales]

Use the box-and-whiskers diagrams to answer the questions that follow.

3.3.1 Determine the value of the 75th percentile of sales made by branch B. (2)

3.3.2 Calculate the interquartile range of the sales made by branch B. (3)

3.3.3 List 3 comparisons of how the number of sales of branch A compares to that of branch B based on the information plotted on the box-and-whisker diagrams. (6)

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QUESTION 4

4.1 A school in Bloemfontein received the following water account from the local municipality:

Rose Municipality
B High School

Account Number	Date of reading	Usage	Cost	VAT at 15%
BHS	20/05/2024	27kℓ	**A**	**B**

Water Service Tariffs 2024

Kilolitre	Tariff per Kilolitre (excl. VAT)
≤ 6kℓ	Free
6kℓ < x ≤ 12kℓ	R13,67
12kℓ < x ≤ 25kℓ	R14,10
25kℓ < x ≤ 40kℓ	R14,52
More than 40,1kℓ	R16,22

Total Amount payable for May 2024: C

[Source adapted from: www.archive.gazettes.africa/archive/za-fs/2023]

Use the information given in the table to answer the questions that follow.

4.1.1 On which date was the water meter reading done at the school? (2)

4.1.2 Calculate the missing value **A**, the cost of the water. (6)

4.1.3 Calculate the missing value **B**, the VAT that needs to be paid. (3)

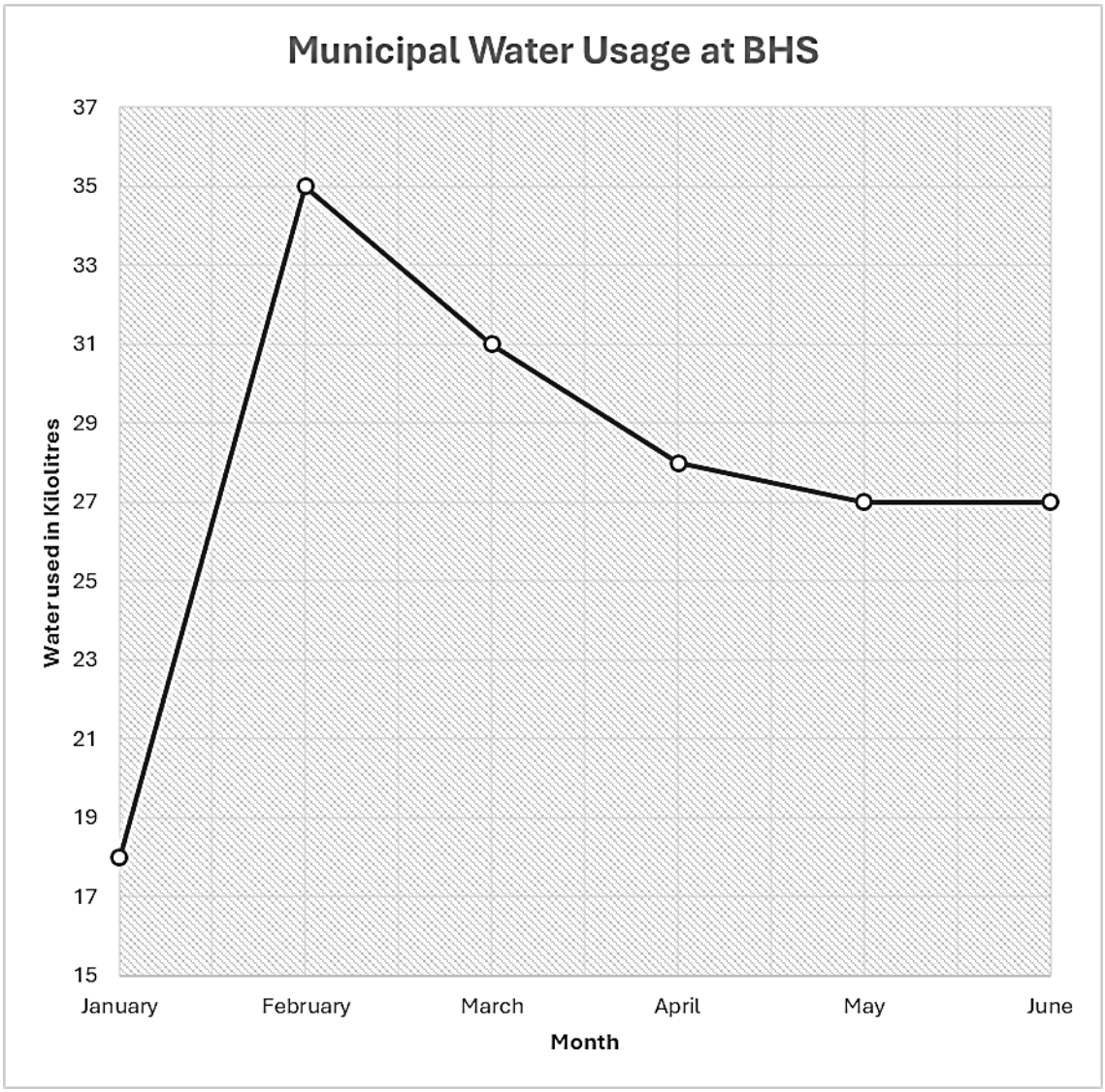
4.1.4 Calculate the missing value **C**, the total amount payable. (2)

4.1.5 In 2023, the tariff for more than 40,1 kl of water used was charged at R15,30 per kilolitre. Determine the percentage increase for this water tariff per kilolitre from 2023 to 2024. You may use the following formula:

$$\%\ \boldsymbol{Increase} = \frac{\boldsymbol{Increase}}{\boldsymbol{Previous\ Price}} \times \mathbf{100}$$ (3)

4.1.6 In the city of Paris, France, residents pay an average of 4,31 EURO (R88,61) per kilolitre of water usage per month. Determine the exchange rate in the form R1:€…Round your answer to four decimal places. (3)

4.2 The school recorded their municipal water usage for the first 6 months during 2024 by constructing the line graph below:



[Source adapted from: various sources]

Use the information given in the graph to answer the questions that follow.

4.2.1 Determine the average municipal water usage for the first 6 months of the year. (3)

4.2.2 Identify, in kilolitres, the modal municipal water usage amount. (2)

4.2.3 Give a reason why you think the water usage was much higher in February compared to January. (2)

4.3 In South Africa, the average price for a customer to install a standard rectangular 7 m x 4 m swimming pool is R80 000.
For a pool installation company, the total cost to install one pool of this size amounts to R66 000. This total cost includes a fixed cost of R23 000 per pool along with all variable costs associated with installation.
[Source adapted from: www.swimmingpoolpros.co.za/swimming-pool-prices/]

Use the information given above to answer the questions that follow.

4.3.1 Derive a formula that can be used to represent the total cost of installing ANY number of new standard rectangular swimming pools. (3)

4.3.2 The pool installation company generated an income of R2 080 000 for a certain month. By using the average price to install a standard rectangular swimming pool and your formula in QUESTION 4.3.1, determine the profit margin for this certain month.
You may use the following formula:

$$\textbf{Profit margin} = \frac{\textbf{profit}}{\textbf{income}} \times \mathbf{100}$$

(6)

4.3.3 The factory shop where the installation company usually buys the fiberglass swimming pools from is currently running a promotion.
All 7 m × 4 m pools are marked down by 10%. Explain the impact of this promotion on the break-even point of the pool installation company. (2)

4.3.4 The factory shop also sells specialised shaped fiberglass pools which are imported from the USA for R87 469, VAT (15%) inclusive. Determine the VAT exclusive amount. (2)

[39]

GRAND TOTAL: [150]

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