KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

# NATIONAL SENIOR CERTIFICATE

## GRADE 12

## MATHEMATICAL LITERACY

## PROVINCIAL STANDARDISED ASSESSMENT

## MARCH 2026

Stanmorephysics.com

**MARKS: 100**

**TIME: 2 hours**

**This question paper consists of 11 pages and a 11-page Special Answer Book.**

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**INSTRUCTIONS AND INFORMATION**

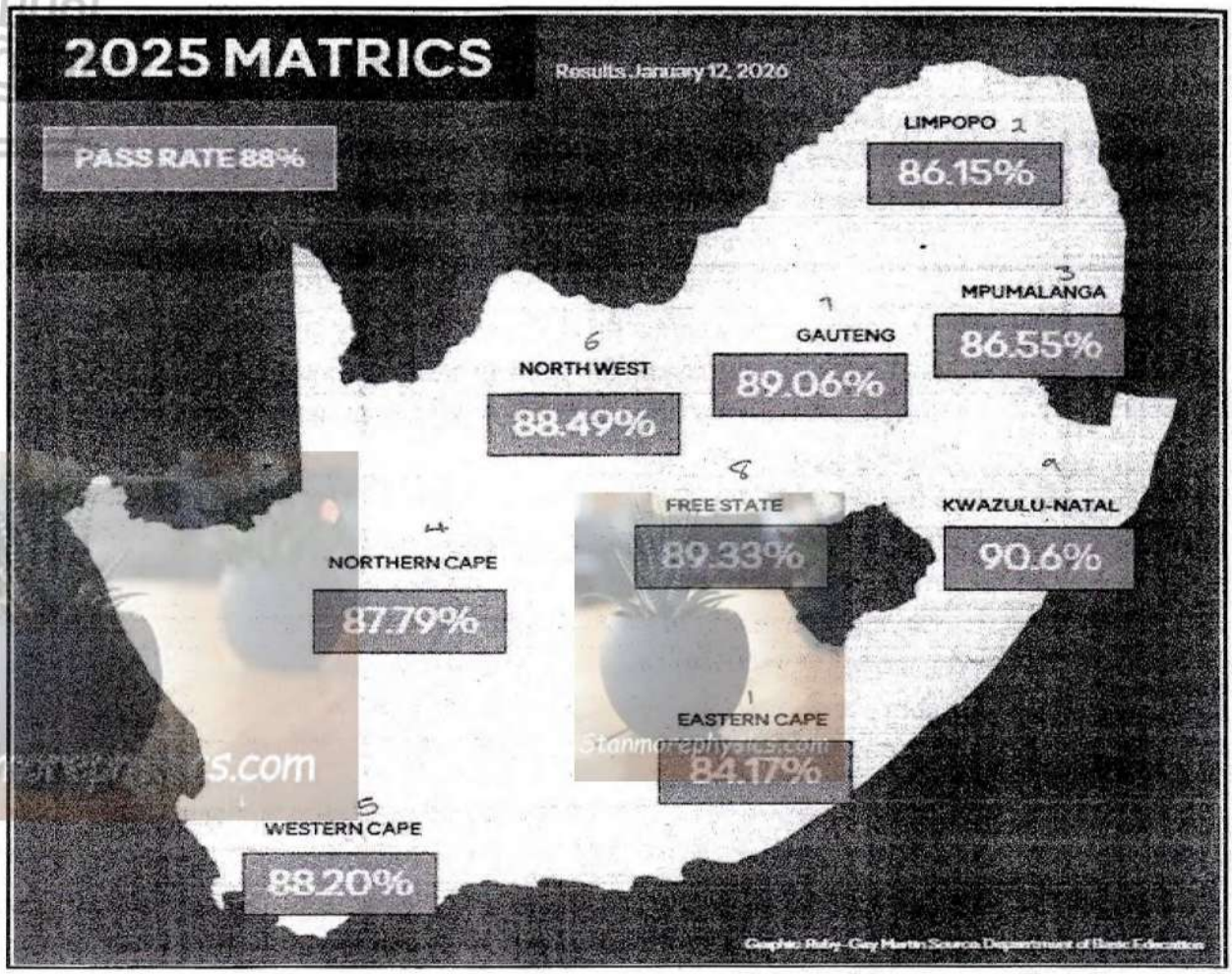
1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Answer ALL the questions in the SPECIAL ANSWER BOOK provided.
3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise. stanmorephysics.com
4. Show ALL calculations clearly.
5. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
8. Write neatly and legibly.




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## QUESTION 1

1.1 The Class of 2025 achieved a national pass rate of 88% in the final examinations, as released on 12 January 2026. The pass percentages for each province are shown below.




[Adapted from www.timeslive.co.za]

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

1.1.1 Identify the province that attained first position. (2)

1.1.2 Arrange the provincial pass rates shown above in ascending order. (2)

1.1.3 Determine the province that represents the median of the data above. (2)

1.1.4 Determine the unit ratio of the KwaZulu-Natal pass rate to the Western Cape pass rate, rounded to two decimal places (2)

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1.1.5 Calculate the difference between the highest provincial pass rate and the lowest provincial pass rate. (2)

1.1.6 A province is selected at random from the nine provinces. Calculate the probability as a simplified fraction that the selected province has a pass rate of at least 89%. (3)

1.2 TABLE 1 below gives definitions of terminology used in Mathematical Literacy.

**TABLE 1: DEFINITIONS OF TERMINOLOGY USED IN MATHEMATICAL LITERACY**

| LETTER | DEFINITIONS |
|---|---|
| A | The fixed amount of money an employee earns before any additional allowances, bonuses, or deductions. |
| B | The amount an employee takes home after all deductions |
| C | The interest calculated only on the original amount borrowed or invested |
| D | The value of a currency in relation to the cost of living in another country |
| E | An arrangement where a fixed amount of money is automatically paid from your bank account to another account at regular intervals |
| F | The interest calculated on both the principal amount and any interest that has already been added. |
| G | The general increase in the prices of goods and services over time, which reduces the purchasing power of money |
| H | An arrangement where a bank automatically allows a third party to withdraw varying amounts from your account |

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Use TABLE 1 above and match the definitions with the terminology below. Write only the letter (A-H) next to the question numbers ( 1.2.1 to 1.2.4), e.g. 1.2.5 J

1.2.1 Simple Interest (2)

1.2.2 Basic Salary (2)

1.2.3 Debit order (2)

1.2.4 Buying power (2)

**[21]**

## QUESTION 2

2.1 James intends to invest R50 000 for a period of 12 months, making an additional deposit of R3 500 at the end of each month. His bank offers an interest rate of 7,05% per annum, compounded monthly. TABLE 2 below shows the projected growth of his investment.

**TABLE 2: JAMES' INVESTMENT FOR 12 MONTHS**

| Month | Opening Balance (R) | Monthly Payment (R) | Balance with Payment (R) | Interest (R) | Closing Balance with Interest (R) |
|---|---|---|---|---|---|
| 1 | 50 000 | 3 500 | 53 500 | 314,31 | 53 814,31 |
| 2 | 53 814,31 | 3 500 | 57 314,31 | 336,72 | 57 651,03 |
| 3 | 57 651,03 | 3 500 | 61 151,03 | 359,26 | 61 510,29 |
| 4 | 61 510,29 | 3 500 | 65 010,29 | 381,94 | 65 392,23 |
| 5 | 65 392,23 | 3 500 | 68 892,23 | 404,74 | 69 296,97 |
| 6 | 69 296,97 | 3 500 | 72 796,97 | 427,68 | 73 224,65 |
| 7 | 73 224,65 | 3 500 | 76 724,65 | 450,76 | 77 175,41 |
| 8 | 77 175,41 | 3 500 | 80 675,41 | 473,97 | 81 149,38 |
| 9 | 81 149,38 | 3 500 | 84 649,38 | 497,32 | 85 146,70 |
| 10 | 85 146,70 | 3 500 | 88 646,70 | 520,80 | 89 167,50 |
| 11 | 89 167,50 | 3 500 | 92 667,50 | 544,42 | 93 211,92 |
| 12 | 93 211,92 | 3 500 | 96 711,92 | **B** | **C** |

**[Adapted from James' investment account]**

Use TABLE 2 and the information above to answer the questions that follow.

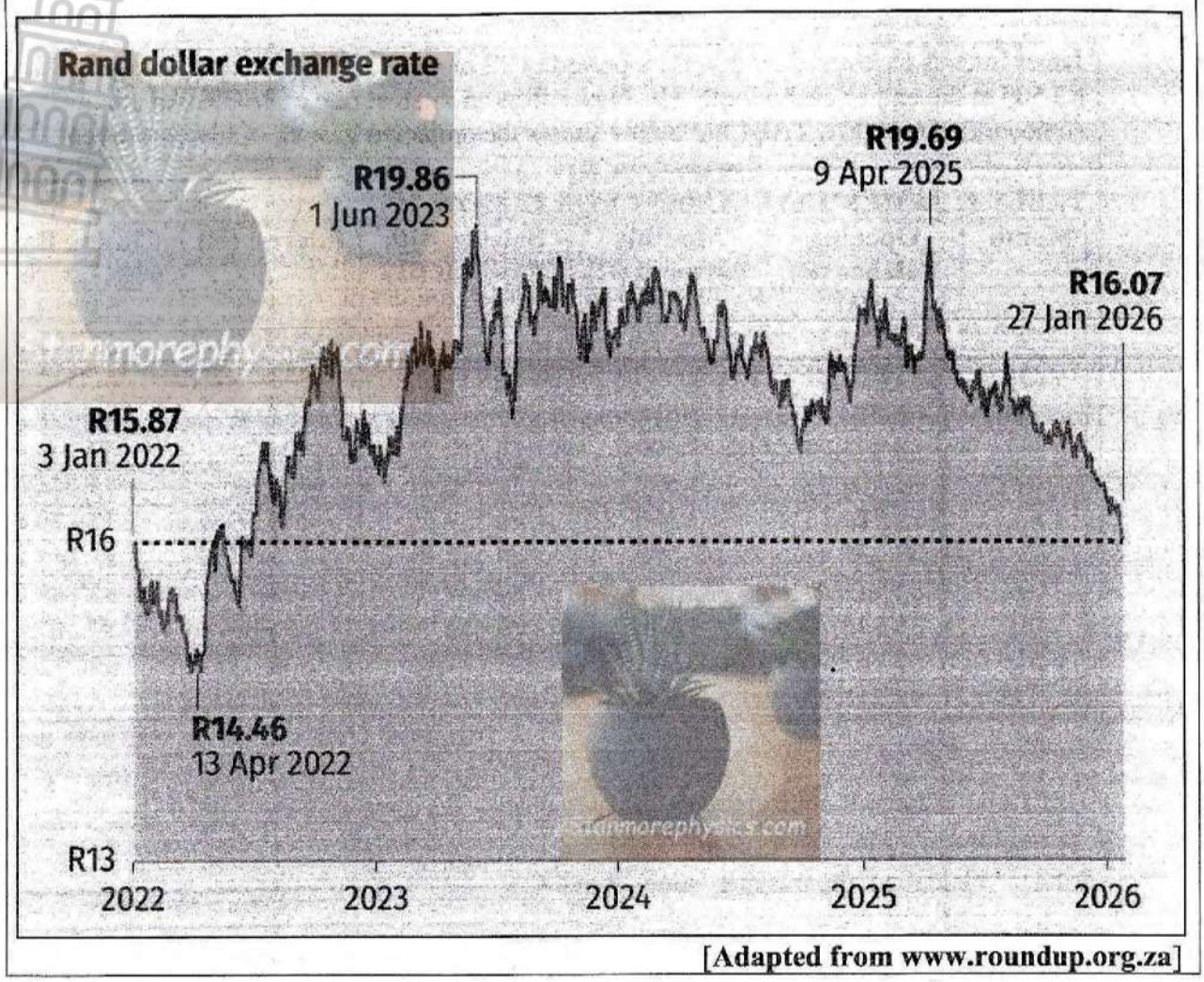
2.1.1 Calculate the missing values **B** and **C**. (5)

2.1.2 Calculate the total interest that James will earn at the end of the 12-month investment period. (4)

2.1.3 Explain, using TABLE 2 above, how compounding monthly affects the total interest earned compared to earning simple interest. (2)

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2.2 The graph below shows the rand dollar exchange rates from January 2022 to January 2026.




[Adapted from www.roundup.org.za]

Use the information above to answer the questions that follow.

2.2.1 Identify the exact date (day, month, and year) on which the rand was at its strongest. (2)

2.2.2 As of January 2026, South Africa's national debt stands at R6,09 trillion. Convert this amount into US dollars using the rand-dollar exchange rate from the graph above. (3)

2.2.3 James visited the USA in April 2022 and January 2026. For each of the visits, he exchanged R50 000 for US dollars. He claims that during his January 2026 visit, he received $346.42 less than he did in April 2022.

Use the exchange rates provided above to verify whether James' statement is correct. (6)

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2.3 Food inflation rates for 2026, 2027, and 2028 are projected to be 4.4%, 3.2%, and 3.0%, respectively. TABLE 3 below shows the 2026 food basket prices for Johannesburg, Durban, and Cape Town.

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**TABLE 3: FOOD BASKET PRICES FOR THREE CITIES – 2026**

| City | 2026 Food Basket Price (R) |
|---|---|
| Johannesburg | R5 515,69 |
| Durban | R5 295,36 |
| Cape Town | R5 389,36 |

[Adapted from www.businesstech.co.za]

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

2.3.1 Calculate the probability that a year, chosen at random from the given period, has a food inflation rate greater than 3%. (2)

2.3.2 Calculate the difference in food basket prices between Johannesburg and Cape Town. (2)

2.3.3 Calculate the projected food basket price in Durban for 2028 using the 2027 and 2028 inflation rates. (4)

**[30]**




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## QUESTION 3

3.1 TABLE 4 below shows the number of births registered at Home Affairs. A baby's birth has to registered within 30 days. stanmorephysics.com

**TABLE 4: BIRTH REGISTRATIONS FOR SOUTH AFRICA 2023**

| Age of mother | Number of birth registrations | | | Percentage | | |
|---|---|---|---|---|---|---|
| | Total | Current | Late | Total | Current | Late |
| 10–14 | 3 417 | 2 311 | 1 106 | 100.0 | 67.6 | 32.4 |
| 15–19 | 128 192 | 100 095 | 28 097 | 100.0 | 78.1 | 21.9 |
| 20–24 | 198 314 | 183 990 | 14 324 | 100.0 | 92.8 | 7.2 |
| 25–29 | 224 081 | 212 256 | 11 825 | 100.0 | 94.7 | 5.3 |
| 30–34 | 200 301 | 190 186 | 10 115 | 100.0 | 95.0 | 5.0 |
| 35–39 | 127 010 | 120 396 | 6 614 | 100.0 | 94.8 | 5.2 |
| 40–44 | 38 650 | 36 391 | 2 259 | 100.0 | 94.2 | 5.8 |
| 45–49 | 2 702 | 2 389 | 313 | 100.0 | 88.4 | 11.6 |
| 50–54 | 173 | 107 | 66 | 100.0 | 61.8 | 38.2 |
| Unspecified outside the 10–54 age range | A | 216 | 9 082 | 100.0 | 2.3 | 97.7 |
| Total | 932 138 | 848 337 | 83 801 | 100.0 | 91.0 | 9.0 |

**[Source:www.statssa.gov.za]**

Use TABLE 4 and the information above to answer the questions that follow.

3.1.1 Determine the percentage of late birth registrations in 2023. (2)

3.1.2 Determine the total number of birth registration with mothers under the age of 20. (2)

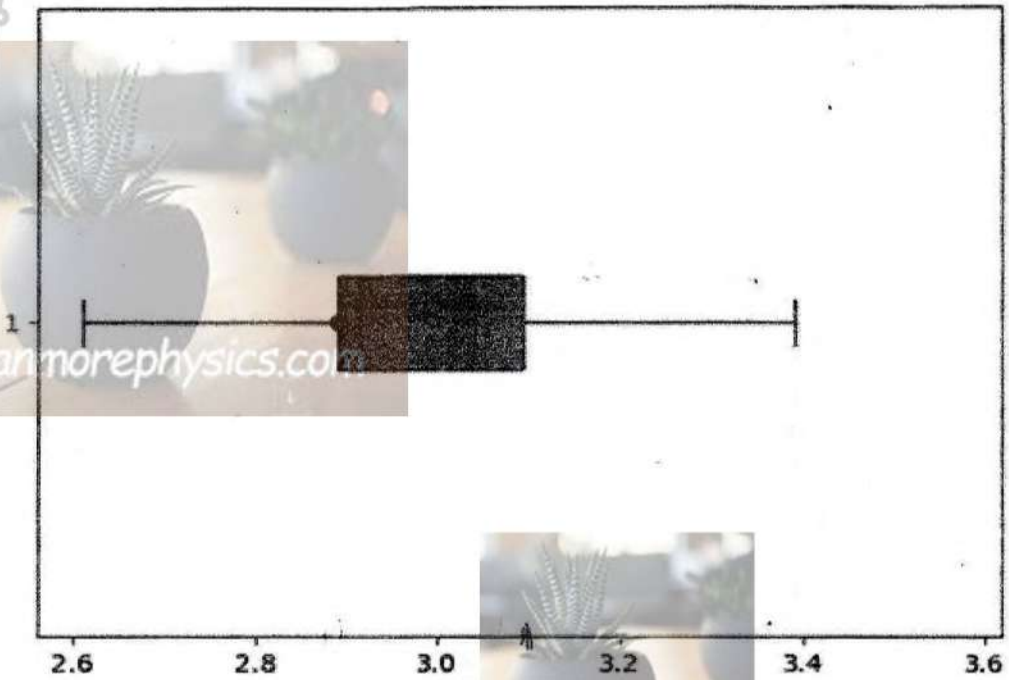
3.1.3 Determine the median number of current registrations in 2023. (3)

3.1.4 Calculate the missing value A in TABLE 4, if the mean total number of birth registrations was 93213,8. (3)

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3.2 The mass of a new born baby is shown in the box and whisker plot below.

**BOX AND WHISKER PLOT OF BIRTH MASS AT A HOSPITAL**




**[Adapted source www: medium.com]**

Use the box and whisker plot and information above to answer the questions that follow.

3.2.1 Name the Quartile that supports this statement, "25% of the babies had a mass of less than 2,9kg". (2)

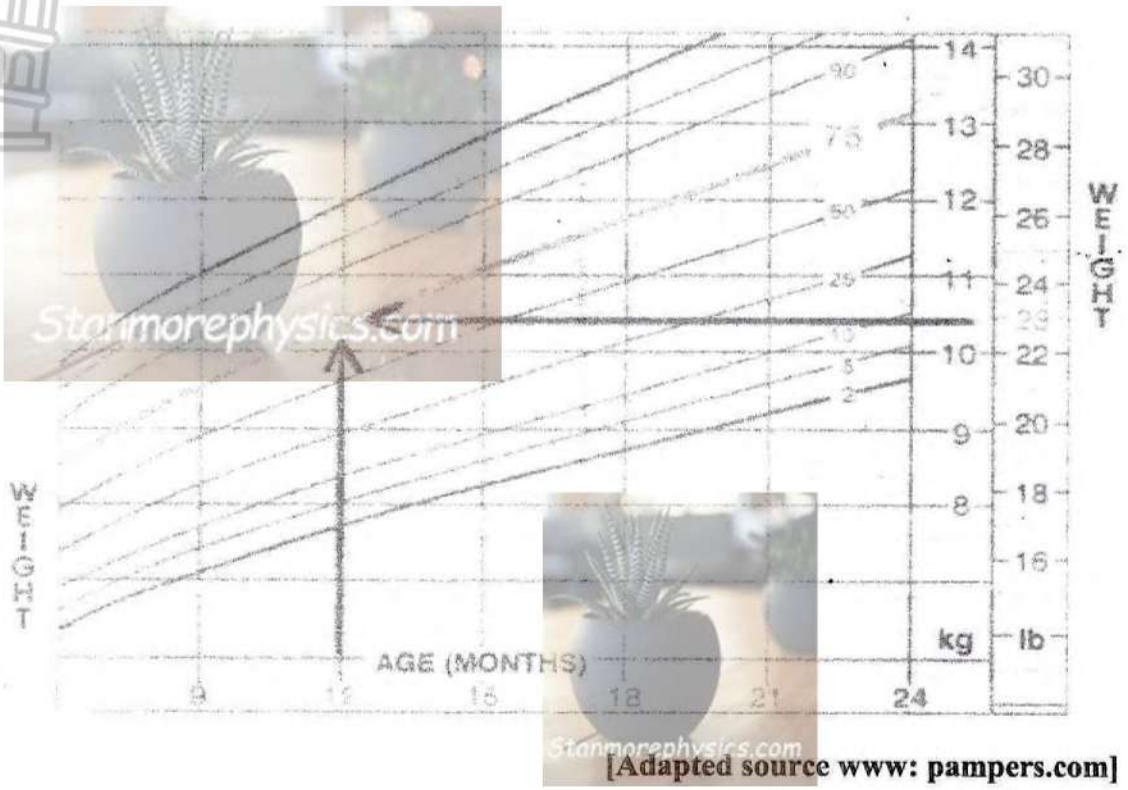
3.2.2 Calculate the inter quartile range for the birth mass. (3)

3.2.3 A nurse stated that the top 25% of babies have birth mass with a difference of 0,3 kg. Verify, showing all calculations whether the statement is correct. (3)

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3.3 The extract from the growth chart below shows the age and weight of babies.

**GROWTH CHART SHOWING AGE AND WEIGHT OF A BABY BOY**




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[Adapted source www: pampers.com]

Use the growth chart and information above to answer the questions that follow.

3.3.1 Identify the age and weight (in kilograms) of a baby on the 75th-percentile curve. (2)

3.3.2 Explain what the 75th-percentile curve represents. (2)

3.3.3 At 24 months, the baby should have been on the 75th-percentile curve, but was on the 50th-percentile curve. Determine the difference in weight and provide a possible reason for this difference. (3)

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**[25]**

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## QUESTION 4

4.1 Mr Michaels is 45 years old and earns a salary of R22 500 per month. He contributes 7,5% of his salary to a pension fund. Mr Michael belongs to a private medical aid scheme and pays medical aid for his family of four. ANNEXURE A shows the annual Income tax rates and Rebate table for the year 2024/2025.

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

4.1.1 Explain the term *medical aid credit.* (2)

4.1.2 Show how the amount of R77 362 in the tax table was calculated. (3)

4.1.3 Determine Mr Michaels' annual taxable income. (3)

4.1.4 Determine the amount of tax Mr Michaels will pay per month. (8)

4.2 Starlink is an international mobile service provider that is not yet licensed to operate in South Africa. TABLE 5 below shows the company's cell phone tariff structure.

**TABLE 5: COMPARISON OF RESIDENTIAL AND ROAMING COSTS FOR 2026**

| | **Residential Option** | **Roaming Option** |
|---|---|---|
| **Once off - Hardware cost** | R6 800 | R6 800 |
| **Cost per Month** | R540 | R900 |
| **Cost per GB of data** | R2,16 | R9,00 |
| **Free DATA allowance** | 250GB | 100GB |
| **Portability** | Fixed address only | Works in 150 countries |
| **Down load speed** | 100 Mbs | 127 Mbs |

**[Adapted Source :** https://www.techinafrica.com]

**NOTE**: Roaming refers to the ability to use your mobile phone on another network outside your service provider's coverage area, usually when you are in a different country.

Use TABLE 5 above to answer the questions that follow.

4.2.1 Write a formula to represent the total cost of the Residential option for the first month of usage. (3)

4.2.2 A claim has been made that the difference between the two options in the first month is R2 000 when 500 GB of data is used.
Verify, showing all working, if this claim is VALID. (5)

**[24]**

**TOTAL [100]**

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**QUESTION 4**

**ANNEXURE A**

**TAX RATES FOR THE 2024/2025 TAX YEAR**

| TAX BRACKET | TAXABLE INCOME (in R) | TAX RATES (in R) |
|---|---|---|
| 1 | 0–237 100 | 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 more | 644 489 + 45% of taxable income above 1 817 000 |

| REBATES | AMOUNT |
|---|---|
| Below age 65 | R17 235 |
| Age (65–74) | R9 444 |
| Age 75 and over | R3 145 |

| MEDICAL TAX CREDITS PER MONTH FOR 2024/2025 | |
|---|---|
| Taxpayer | R364 |
| Taxpayer and one dependent | R728 |
| Each additional dependent | R246 |

**[Source adapted: www.sars.gov.za]**

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