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NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2025

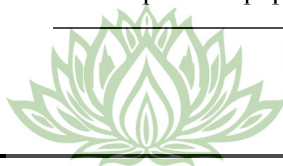
MATHEMATICAL LITERACY P1

MARKS: 100

TIME: 2 hours



This question paper consists of 7 pages.



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INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Write your FULL NAME and SURNAME in your ANSWER BOOK.
2. The question paper consists of FOUR QUESTIONS. Answer ALL the questions in your ANSWER BOOK.
3. Start EACH question on a new page in the ANSWER BOOK.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Leave ONE line open between two sub-questions, for example between QUESTION 2.1 and QUESTION 2.2.
6. You may use a non-programmable calculator.
7. You may use appropriate mathematical instruments.
8. Show ALL formulae and substitutions in ALL calculations.
9. Round off your final numerical answers to a minimum of TWO decimal places.
10. Write neatly and legibly.



QUESTION 1

- 1.1 Some Mathematical Literacy terminology is given below. Choose an appropriate description from COLUMN B that matches the term in COLUMN A. Write only the letter (A–G) next to the question numbers (1.1.1 to 1.1.4) in the ANSWER BOOK, for example 1.1.5 H.

COLUMN A	COLUMN B
1.1.1 Mean	A The most frequent score in a data set
1.1.2 Probability	B Relief given to tax paying citizens
1.1.3 Rebate	C Likelihood of a particular outcome occurring
1.1.4 VAT	D All possible outcomes of an experiment
	E Sum of all values divided by the number of values
	F A tax that is levied at 15% on most goods and services
	G The price after VAT is added

(8)

- 1.2 Supermarkets usually have specials to encourage people to buy in their shops. There was a promotion on vegetables at PnP supermarkets. The items on promotion are shown in the picture below. Study the picture and answer the questions that follow.



800 grams = 0,8 kg

- 1.2.1 Calculate the total mass in kg of the four items on special.

(3)



- 1.2.2 Determine the VAT paid on the four items. (2)
- 1.2.3 Determine the ratio of the mass of potatoes to tomatoes in the form of 1 : ... (2)
- 1.2.4 Calculate the cost of 1,5 kg onions. (2)
- [17]**

QUESTION 2

Alex would like to buy a house for his family. He researched the options that are offered by banks.

TABLE 1 below shows the payment options that Alex has over a period of 10 years, 15 years and 20 years. The interest rate is fixed at 11,75% per annum. Alex's annual salary notch is R545 678,00.

TABLE 1: HOUSE PRICES AND MONTHLY PAYMENTS

PRICE OF HOUSE	MONTHLY PAYMENT FOR 10 YEARS	MONTHLY PAYMENT FOR 15 YEARS	MONTHLY PAYMENT FOR 20 YEARS
R500 000,00	R7 170,47	R5 989,66	R5 487,54
R1 000 000,00	R14 271,95	R11 910,31	R10 906,07
R1 200 000,00	R17 112,54	R14 278,58	R13 073,48

- 2.1 Determine the number of payments if Alex decides to buy a R500 000,00 house over a period of 15 years. (2)
- 2.2 The financial advisors encourage clients to pay 30% of their monthly gross salary towards their mortgage. Calculate the monthly payment that Alex can afford to pay every month. (4)
- 2.3 Calculate the interest that is charged on a R1 200 000,00 house over 20 years. (4)
- 2.4 Alex would like to buy a house for R1 000 000,00 over 15 or 20 years. Advise Alex on the best option to use to buy the house. Also give advantages and disadvantages of buying a house over 15 or 20 years. (6)
- 2.5 The South African Reserved Bank (SARB) announced a new repo rate. The interest will increase by 25 basis points. What will be the effect on the monthly mortgage payment? (2)
- [18]**



QUESTION 3

Alex was a loyal supporter of the Springboks in the 2023/2024 season. He researched the age (in years), weight (in kilograms) and height (in metres) of the players who played as fly-halves and hookers. TABLE 2 below shows the results of 11 such players.

TABLE 2: RESULTS OF PLAYERS

POSITION	AGE	HEIGHT	WEIGHT
Hooker	23	1,87	107
Hooker	33	1,75	118
Hooker	23	1,88	121
Hooker	26	1,83	105
Hooker	28	1,80	111
Hooker	30	1,89	116
Fly-half	26	1,84	96
Fly-half	30	1,89	98
Fly-half	23	1,88	93
Fly-half	27	1,80	80
Fly-half	22	1,85	90

[Adapted from https://all.rugby/club/south-africa/squad#google_vignette]

- 3.1 Give the name of the graph that will be used to show the trend between height and weight. (2)
- 3.2 Calculate the range of the ages of the Springbok players in the two positions. (3)
- 3.3 Determine the lower quartile, median and upper quartile of the weight of the players. (4)
- 3.4 The data in QUESTION 3.3, together with the minimum and maximum value, can be used to draw a statistical graph. Write down the name of this graph. (2)
- 3.5 Alex claims that the mean weight of the hookers is 25 kg more than the mean weight of the fly-half players. Verify whether his claim is VALID or not. (7)
- 3.6 Write the modal ages of the players. (2)
- 3.7 The coach and his assistant coach decided that players who are 35 years and older should not be selected. How many players will not be selected for the Springbok tour in the 2029/2030 season? (2)
- 3.8 Data can be classified as continuous or discrete. The grade 10 teacher asked you to explain to his class why position is classified as discrete and height classified as continuous. (4)
- 3.9 Calculate the interquartile range of the height of the 11 players playing the two positions. (5)
- 3.10 Calculate the probability, as a percentage rounded to the nearest whole number, of selecting a player from the 11 players whose height is less than 185 cm. (4)

[35]

QUESTION 4

- 4.1 Alex, a 46-year-old journalist, earns a monthly taxable income of \$2 500 for the 2023/2024 tax year. The exchange rate has been fixed at R17,50 per 1 US Dollar. TABLE 3 below shows the tax table and rebates for the 2023/2024 tax year.

TABLE 3: 2024 TAX YEAR (1 MARCH 2023 – 28 FEBRUARY 2024)

TAXABLE INCOME (R)	RATES OF TAX (R)
1–237 000	18% of taxable income
237 001–370 500	42 678 + 26% of taxable income above 237 100
370 501–512 800	77 362 + 31% of taxable income above 370 500
512 801–673 000	121 475 + 36% of taxable income above 512 800
673 001–857 900	179 147 + 39% of taxable income above 673 000
857 901–1 817 000	251 258 + 41% of taxable income above 857 900
1 817 001 and above	644 489 + 45% of taxable income above 1 817 000

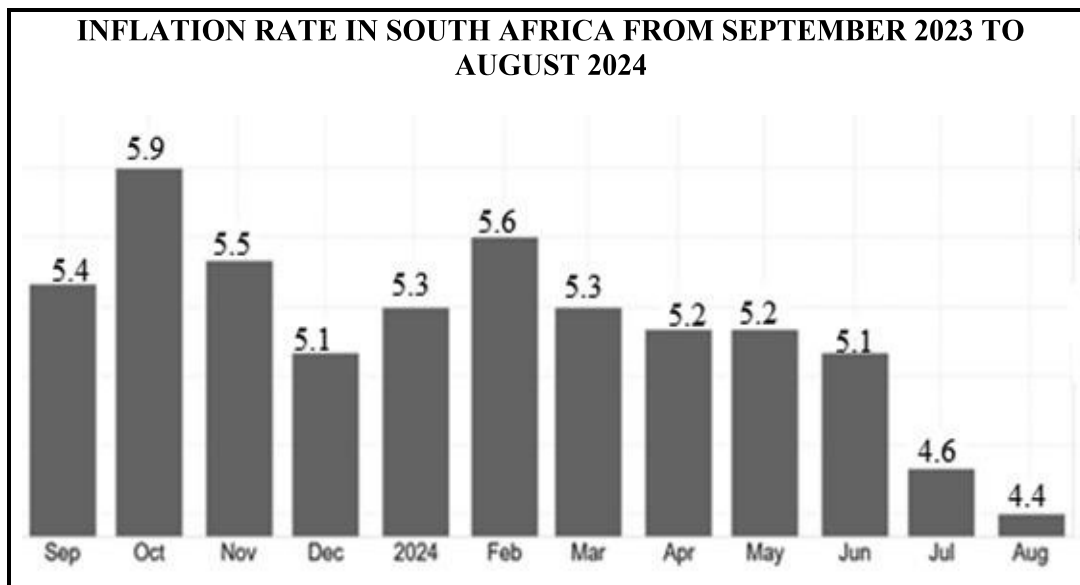
REBATES

Primary rebate	R17 235
Secondary rebate – 65 years and older	R9 444
Tertiary rebate – 75 years and older	R3 145

- 4.1.1 Calculate Alex's annual taxable income in Rands. (3)
- 4.1.2 Calculate Alex's monthly tax. (5)



- 4.2 The inflation rate in South Africa from September 2023 to August 2024, is indicated in the graph below.



[Source: woodworkpdfplans.webfc2.com]

- 4.2.1 Write down the inflation rate in January 2024. (2)
- 4.2.2 Write down the type of graph used to depict the inflation rate of South Africa. (2)
- 4.2.3 Between which two consecutive months did the inflation rate remain the same? (2)
- 4.2.4 Alex claimed that prices would go down by 1% between September 2023 and August 2024. Is Alex's claim VALID? (3)
- 4.2.5 Calculate the expected new price of a house in 2025, if the inflation rate was projected to be 60% of the highest monthly inflation rate in the period of September 2023 to August 2024. The current price of a house is R750 000. (4)
- 4.3 Alex bought a lotto ticket one Saturday morning and won R1,2 million tax free.
- 4.3.1 Write down the money he won in digits. (2)
- 4.3.2 Explain the term 'tax free' in the given context. (2)
- 4.3.3 Alex invested all his winnings at 11,5% per annum compounded quarterly for 9 months. Alex claims that he will be able to buy a house for R1 300 000 after 9 months.
- Verify, with calculations, that this statement is VALID. (5)
- [30]**

TOTAL: 100





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