basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

NOVEMBER 2025

MARKS: 150

TIME: 3 hours

This question paper consists of 13 pages and a SPECIAL ANSWER BOOK of 17 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions.
2. Answer ALL the questions ONLY in the SPECIAL ANSWER BOOK provided.
3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
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.
8. Write neatly and legibly.

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QUESTION 1

1.1 TABLE 1 below shows the prices of some food items in three cities of South Africa, namely Johannesburg, Durban and Cape Town.

TABLE 1: PRICES OF SOME FOOD ITEMS IN THREE SOUTH AFRICAN CITIES

FOOD ITEMS	QUANTITY	JOHANNES-BURG	DURBAN	CAPE TOWN
Salt	1 kg	R18,07	R17,16	R10,24
Onions #	10 kg	R111,59	R100,58	R104,10
Carrots #	5 kg	R41,41	R39,63	R35,08
Butternuts #	10 kg	R105,24	R90,04	R96,91
Curry powder	200 g	R41,91	R34,24	R39,82
White sugar	10 kg	R223,23	R197,07	R229,49
Apples	3 kg	R52,38	R54,73	R46,31
Oranges	7 kg	R104,96	R78,80	R86,64
Eggs #	60 eggs	R163,31	R169,62	R165,52
Canned beans	410 g × 6	R101,94	R84,46	R81,94
TOTAL		...		

[Adapted from www.businesstech.co.za]

NOTE: # indicates zero-rated VAT items.

Use TABLE 1 above to answer the questions that follow.

1.1.1 Name the city where the cost of white sugar is the highest. (2)

1.1.2 Calculate the cost of carrots, per kilogram, in Johannesburg. (2)

1.1.3 Determine, as a unit ratio rounded to THREE decimal places, the price of eggs in Cape Town compared to the price of eggs in Durban in the form **1 : ...** (3)

1.1.4 Calculate the total price of ALL the food items in Johannesburg. (2)

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1.2 TABLE 2 below gives definitions of terminology used in Mathematical Literacy.

TABLE 2: DEFINITIONS OF TERMINOLOGY USED IN MATHEMATICAL LITERACY

LETTER	DEFINITION
A	Identification of the type of data
B	Sum of money that is loaned by a bank or moneylender
C	Goods and products, such as furniture, that can be purchased using a longer-term lease or agreement
D	Interest charged on an amount due, inclusive of interest charges to date
E	A bank product that allows you to buy goods and partially pay for them at the end of the month
F	An arrangement whereby you give permission to a third party to withdraw money from your bank account on a regular basis
G	Complete a frequency table using raw data
H	Interest charged on the principal amount, resulting in the same interest amount every time

Use TABLE 2 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 I.

1.2.1 Compound interest (2)

1.2.2 Hire-purchase (2)

1.2.3 Debit order (2)

1.2.4 Organising data (2)

1.3 TABLE 3 below shows the population data for South Africa by population group and gender for 2022.

TABLE 3: POPULATION DATA FOR SOUTH AFRICA BY POPULATION GROUP AND GENDER FOR 2022

POPULATION GROUP	NUMBER OF MALES	NUMBER OF FEMALES	TOTAL	
			NUMBER OF PEOPLE	% DISTRIBUTION OF TOTAL
Black	...	25 085 330	...	81,0
Coloured	2 601 932	2 737 987	5 339 919	8,8
Indian/Asian	794 882	760 114	1 554 996	2,6
White	2 242 589	2 396 679	4 639 268	7,6
TOTAL	**29 624 882**	**30 980 110**	**60 604 992**	**100**

[Adapted from www.statssa.gov.za]

Use TABLE 3 above to answer the questions that follow.

1.3.1 Write down the population group with the lowest number of females. (2)

1.3.2 State whether the total number of people in the table above represents discrete data or continuous data. (2)

1.3.3 Name the type of instrument used to collect the data above. (2)

1.3.4 Identify the total number of the South African population for 2022. (2)

1.3.5 The total number of black South Africans is forty-nine million seventy thousand eight hundred and nine.

Write this number in numerals without using words. (2)

1.3.6 Express the number of white males as a percentage of the total number of males. (3)

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QUESTION 2

2.1 In South Africa, employees need to pay income tax based on their earnings.

An extract of Muriel Davids' salary slip for one month for the tax year ending February 2025 is shown below. Some information has been omitted.

INTERNATIONAL COMPUTER SPECIALISTS PTY LTD		**EMPLOYEE DETAILS:**	
		EMPLOYEE NAME:	M DAVIDS
		AGE:	42 YEARS
PAYMENTS:			
GROSS SALARY	R35 000		

EMPLOYEE DEDUCTIONS:		**EMPLOYER CONTRIBUTIONS:**	
UIF	R177,12	UIF	R177,12
PAYE TAX	**A**	MEDICAL AID	...
MEDICAL AID	R2 531,54		
NET SALARY	**B**		

Muriel does not contribute to a pension fund; hence her gross salary is her taxable income. She pays the medical aid for herself only and receives no bonus.

ANNEXURE A in the ANSWER BOOK shows the monthly PAYE deduction table and the annual tax rates for the 2024/2025 tax year.

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

2.1.1 Write the acronym *UIF* in words. (2)

2.1.2 Name the institution that collects tax on behalf of the government of South Africa. (2)

2.1.3 Determine the employer contribution towards the medical aid if the employer contributes one third of the total contribution. (2)

2.1.4 (a) Write down the missing value **A** from the monthly PAYE deduction table in ANNEXURE A. (2)

(b) Calculate the missing value **B**. (2)

(c) Muriel stated that she overpaid tax in the 2024/2025 tax year.

Verify, showing ALL calculations, whether her statement is VALID. (8)

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2.2 Muriel Davids travels to work by bus.

TABLE 4 below shows information on the Metrobus service in Johannesburg for three categories of passengers travelling by bus.

TABLE 4: INFORMATION ON THE METROBUS SERVICE

		PASSENGER CATEGORY		
		Adults (15–59 years)	**Children (3–14 years)**	**Pensioners (60+ years)**
Trip Package	**Duration**	**Trip Fare**	**Trip Fare**	**Trip Fare**
1 trip	Daily	R14,20	R10,30	R4,20
10 trips	Weekly	R106,00	R76,40	-
12 trips	Weekly	R127,10	-	-
44 trips	Monthly	R465,60	R336,30	-

[Adapted from www.mbus.joburg.org.za]

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

2.2.1 Calculate the percentage savings a pensioner receives per bus trip when compared to the amount paid by an adult for the same bus trip. (3)

2.2.2 Determine the amount Muriel will save per trip if she buys the monthly package instead of the daily trip package. (5)

2.2.3 Write down the probability of a 10-year old child purchasing a weekly package with 12 trips. (2)

2.2.4 Johannesburg Metrobus introduced a compulsory card payment system. All passengers will be required to purchase the Metrobus card for R35 to activate the card. They will then have to upload trip fares according to the different available trip packages.

Muriel purchased a Metrobus card together with an uploaded trip package to the total value of R416,30.

Calculate the maximum number of weekly trips Muriel can take using this card. (4)

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QUESTION 3

3.1 Social media platforms enable users to share information and ideas virtually through texts, photographs, videos and much more.

TABLE 5 below shows the use of popular social media platforms categorised by gender.

TABLE 5: USE OF SOCIAL MEDIA PLATFORMS CATEGORISED BY GENDER

SOCIAL MEDIA PLATFORMS	PERCENTAGE MALE USERS	MALE USERS (in millions)	PERCENTAGE FEMALE USERS	FEMALE USERS (in millions)
Facebook	57%	1 732,8	43%	1 307,2
Instagram	51%	1 020	49%	980
Snapchat	46%	***	54%	405
X/Twitter	56%	346,64	44%	272,36
TikTok	43%	645	57%	855
YouTube	54%	1 350	46%	1 150

[Adapted from www.statista.com, www.datareportal.com]

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

3.1.1 Calculate the median percentage for male social media users. (4)

3.1.2 Determine, as a decimal, the probability of randomly selecting a social media platform where the female users were fewer than the male users. (3)

3.1.3 Fezeka is interested in the number of male and female *Snapchat* users.

(a) Determine the total number of *Snapchat* users. (2)

(b) Fezeka stated that the difference between the number of female and male *Snapchat* users was 61 300 000.

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

3.2 There has been an increase in the number of long-term evolution (LTE) devices in South Africa over the last three years.

ANSWER SHEET 3.2 in the ANSWER BOOK shows a graph for the number of LTE devices per province over a three-year period. Some of the information on the graph has been omitted.

NOTE: LTE is a term used for a particular type of 4G that delivers a fast mobile internet experience.

Use ANSWER SHEET 3.2 and the information above to answer the questions that follow.

3.2.1 Name the type of graph drawn on ANSWER SHEET 3.2. (2)

3.2.2 Use the graph on ANSWER SHEET 3.2 to do the following:

(a) Write down the names of TWO provinces that had the same number of LTE devices during 2021. (2)

(b) Determine the number of LTE devices in Limpopo during 2022. (3)

(c) Calculate the range of LTE devices in the provinces during 2021. (4)

3.2.3 The data below represents the number of LTE devices for two provinces during 2023 that has been omitted in the graph.

PROVINCE	NUMBER OF LTE DEVICES DURING 2023
KwaZulu-Natal	11 000 000
Mpumalanga	5 500 000

Use the data above to complete the graph on ANSWER SHEET 3.2. (4)

3.2.4 Determine, as a fraction, the probability of randomly selecting a province that has a total number of LTE devices less than 8 million for the three-year period. (2)
[30]

QUESTION 4

4.1 Monwabisi operates a trailer rental business. His rental costs for hiring a trailer are listed below.

- R1 000 refundable deposit per trailer if there is no damage to the trailer
- R350 per day per small trailer
- R500 per day per large trailer

TABLE 6 below shows the rental costs of trailers, including the deposit.

TABLE 6: RENTAL COSTS OF TRAILERS, WITH THE DEPOSIT INCLUDED

Number of days (n)	1	3	5	7	10	15
Cost for small trailer	R1 350	R2 050	**B**	R3 450	R4 500	R6 250
Cost for large trailer	R1 500	R2 500	R3 500	R4 500	R6 000	R8 500

[Adapted from www.getawaytrailers.co.za]

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

4.1.1 Write down a formula to calculate the rental cost, including the deposit, of a large trailer in the form:

Cost = ... (2)

4.1.2 Calculate the missing value **B**. (3)

4.1.3 On 12 December 2024, Monwabisi rented out TWO small trailers and SIX large trailers to different customers for a day.

One of the trailers was returned with a damaged rear light.

(a) Monwabisi stated that his total income, after refunding the deposit, amounted to R4 550.

Verify, showing ALL calculations, whether his statement is VALID. (6)

(b) The following quotation for the repair and replacement of the rear light was received:

- New rear light: R242
- Labour at R480 per hour or part thereof
- Time required to complete the repair and replacement is 1 hour 30 minutes

Verify, showing ALL calculations, whether the deposit amount will be sufficient to cover the total cost of the entire repair and replacement. (4)

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4.2 TABLE 7 below shows the VAT payments made to SARS by vendors in certain economic sectors.

TABLE 7: VAT PAYMENTS BY ECONOMIC SECTOR VENDORS FOR 2023/2024

ECONOMIC SECTORS	NUMBER OF VENDORS	VAT PAYMENTS (R million)	AVERAGE PAYMENT PER VENDOR (R million)
Financial	197 178	221 322	1,12245
Manufacturing	46 901	73 893	1,57548
Wholesale and retail trade	86 610	76 826	0,88703
Construction	39 279	25 593	**V**
Transport	15 258	29 418	1,92804
Community and social	33 825	32 458	0,95959
Utilities	2 658	22 141	8,32995

[Adapted from www.statssa.gov.za]

NOTE: A vendor is a person or company offering goods or services for sale.

Use TABLE 7 above to answer the questions that follow.

4.2.1 Determine, rounded to the nearest thousand, the missing value **V**. (3)

4.2.2 Write down the sector that has the third largest number of vendors. (2)

4.2.3 Calculate (in R million) the mean VAT payment amount per economic sector. (3)

4.2.4 (a) Arrange the number of vendors in ascending order. (2)

(b) The value of quartile 3 (Q3) for the number of vendors is 86 610.

Calculate the interquartile range (IQR) for the number of vendors.

You may use the following formula:

Interquartile range (IQR) = Q3 – Q1 (3)

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QUESTION 5

5.1 Candice started a small delivery business in London and planned to purchase an electric car for the business.

TABLE 8 below shows information on TWO car purchase options, **A** and **B**, that she could choose from.

TABLE 8: INFORMATION ON THE CAR PURCHASE OPTIONS

PICTURE OF A DOLPHIN HATCHBACK CAR		
		
DETAILS	**OPTION A**	**OPTION B**
Payment period	48 months	48 months
Deposit and first-month instalment	£1 173,66	£1 640,61
Additional months' instalment	£195,61	£182,29
Compulsory monthly maintenance cover	£25,36	£24,00

[Adapted from www.leasecar.uk/car-leasing/byd/dolphin-hatchback]

NOTE: All amounts exclude **20% VAT**.

Use TABLE 8 and the information above to answer the questions that follow.

5.1.1 Calculate the total maintenance cover for the payment period for OPTION **B**. (2)

5.1.2 Candice chooses OPTION **A**.

(a) Give ONE possible reason why Candice chose OPTION **A**. (2)

(b) Calculate the total amount, including VAT, that she would have paid at the end of the payment period. (7)

5.1.3 Candice's aunt in Switzerland offers to pay the deposit and first-month instalment.

TABLE 9 below shows the currency conversion factors.

TABLE 9: CURRENCY CONVERSION FACTORS

CURRENCY	ZAR PER UNIT	UNITS PER ZAR
Swiss franc (CHF)	20,48	0,049
Pound sterling (£)	23,20	0,043

[Adapted from www.xe.com/currencyconverter]

Calculate, in Swiss franc (CHF), the deposit and first-month instalment for OPTION **A**. (5)

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5.2 Candice's husband has a car with a 40 ℓ petrol tank capacity. The price of petrol may change from month to month.

ANNEXURE B in the ANSWER BOOK shows the graph of the average petrol price per month in pounds (£) for a four-month period during 2024.

TABLE 10 below shows the monthly inflation percentages for a four-month period during 2024.

TABLE 10: MONTHLY INFLATION RATES FOR THE PERIOD JUL. 2024 TO OCT. 2024

MONTH	INFLATION RATE (in %)
Jul. 2024	2,2
Aug. 2024	2,2
Sep. 2024	**C**
Oct. 2024	2,3

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

5.2.1 The average inflation rate over the four-month period during 2024 was 2,1%.

Calculate the missing value **C**. (3)

5.2.2 Candice stated that the difference in the cost of a full tank of petrol from Jul. 2024 to Aug. 2024, was £1,5.

Verify, showing ALL calculations, whether her statement is VALID. (5)

5.2.3 Calculate, in £ per litre, the cost of petrol during Jun. 2024, if the petrol price from Jun. 2024 to Jul. 2024 changed in line with inflation. (3)

5.2.4 Describe the trend in the inflation rate for the period Jul. 2024 to Oct. 2024. (3)
[30]

TOTAL: 150

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