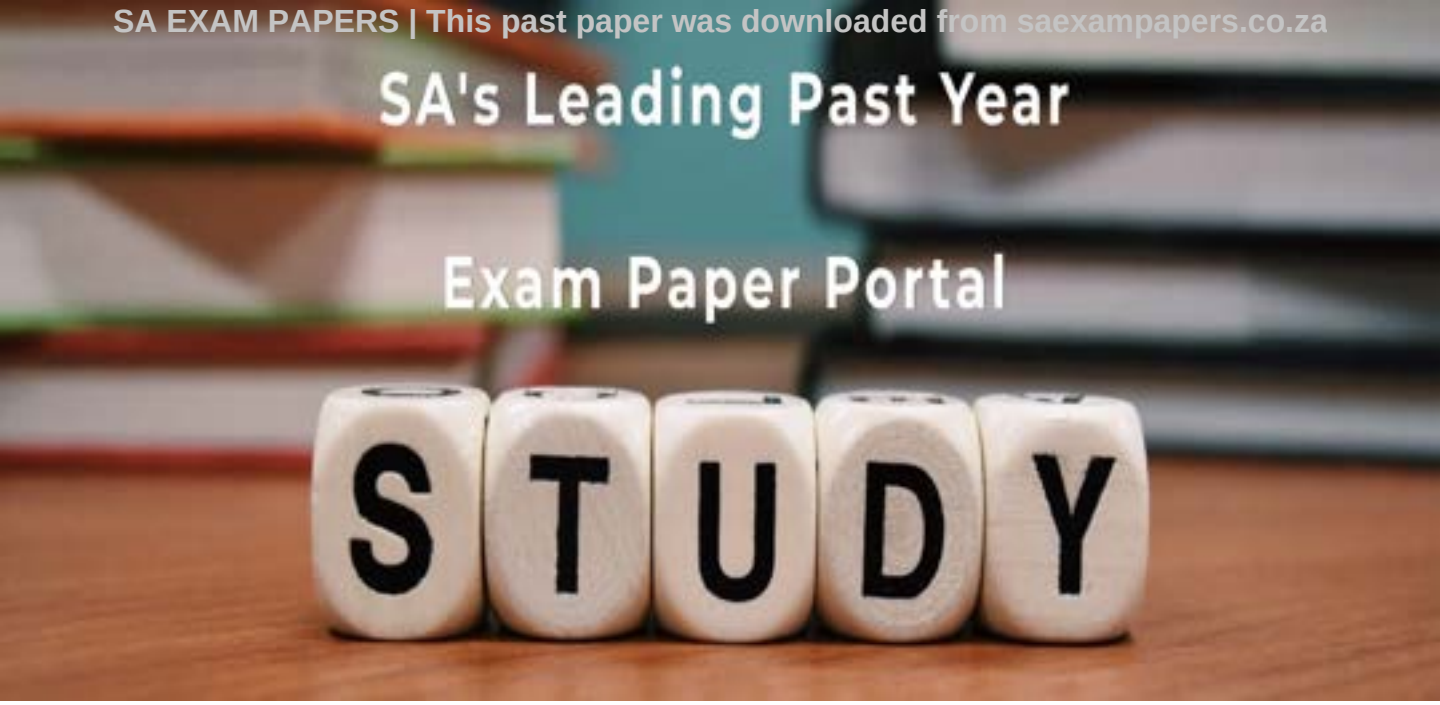


education

Department:
Education
NORTHERN CAPE

PROVINCIAL EXAMINATIONS

GRADE 12

MATHEMATICAL LITERACY P1

MAY / JUNE 2024

MARKS: 100

TIME: 2 hours

This question paper consists of 11 pages including 3 annexures.

INSTRUCTIONS AND INFORMATION

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

   ANNEXURE A for QUESTION 1.1
   ANNEXURE B for QUESTION 2.1
   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. Indicate units of measurement, where applicable.
9. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

1.1 An extract of the bank statement of Ms Modise is given in ANNEXURE A. Some transactions have been omitted.

Use ANNEXURE A to answer the questions that follow.

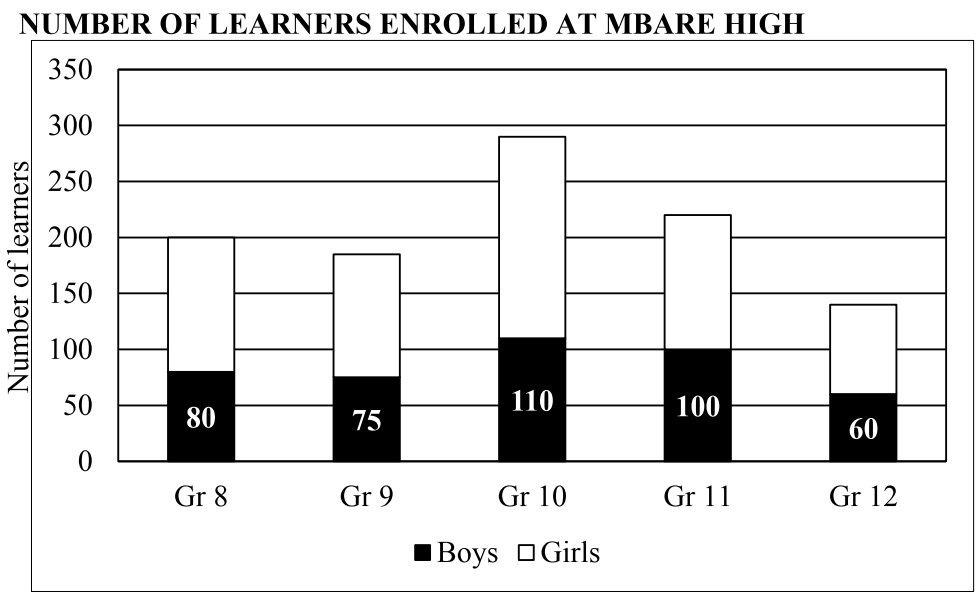
1.1.1 Write down the account number of Ms Modise. (2)

1.1.2 Write down Ms Modise's salary amount. (2)

1.1.3 Explain the meaning of the additional information:
(# these fees are inclusive of VAT at 15%) (2)

1.1.4 Calculate the value of **A**, the balance on 24/11. (3)

1.2 The number of learners enrolled at Mbare high school is given in the graph below.



Use the graph above to answer the questions that follow.

1.2.1 Name the graph used to represent the number of learners above. (2)

1.2.2 Determine the number of girls in Grade (Gr) 8. (3)

1.2.3 State whether the data in the graph are discrete or continuous data. (2)

1.2.4 Name another graph that can be used to represent the data above. (2)

[18]

QUESTION 2

2.1 Kabo is a 66 year old manager, who earned an annual taxable income of R465 280 during the 2020/21 financial year.
He is a member of a medical aid and contributes monthly for him and his wife.

ANNEXURE B shows the personal income tax rates, tax rebates and tax thresholds for individuals for tax year 1 March 2020 to 28 February 2021.

Use ANNEXURE B to answer the questions that follow.

2.1.1 Define the term *tax threshold.* (2)

2.1.2 Show that the tax threshold for *Age 75 and older*, R143 850, in the table is CORRECT. (4)

2.1.3 Calculate Kabo's annual income tax payable. (7)

2.2 Kabo is renting a townhouse in town.
TABLE 1 below shows the town's tariff structure for water consumption.

TABLE 1: MUNICIPAL TARIFF STRUCTURE

	Prepaid Water	**2019/20 c/kℓ**	**2020/21 c/kℓ**
Block 1	0 – 7 kℓ	856,35	868,95
Block 2	more than 7 – 13,5 kℓ	1 089,28	1 106,32
Block 3	more than13,5 – 25 kℓ	1 546,83	1 579,74
Block 4	more than 25 kℓ	1 825,10	1 859,53

[Adapted from Gasegonyane Municipal Water Tariffs]

All tariffs exclude 15% VAT

2.2.1 Write the amount used for Block 3 in 2021 in rand and cent. (2)

2.2.2 Define the term *tariff* in the given context. (2)

2.2.3 Determine, to the nearest percentage, the increase in the price per kℓ for Block 4 from 2019/2020 to 2020/2021.

You may use the following formula:

$$\textbf{Percentage increase} = \frac{\textbf{2020/21 price} - \textbf{2019/20 price}}{\textbf{2019/20 price}} \times \textbf{100\%}$$ (5)

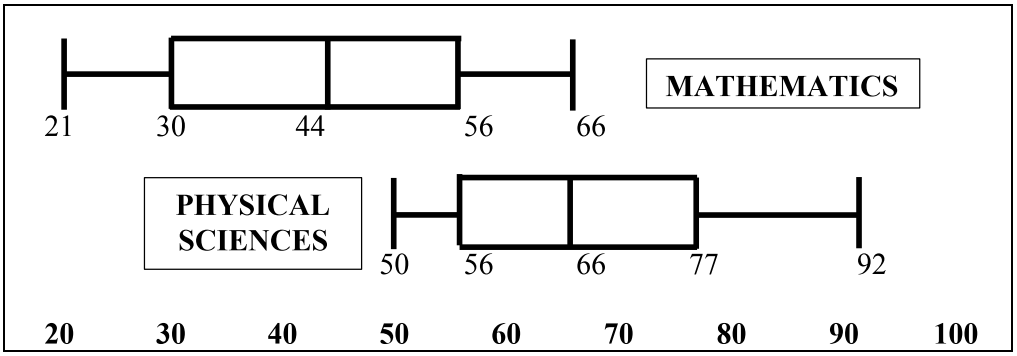
2.2.4 Kabo used 27 kℓ of water in July 2019.
Determine the total amount payable, including VAT, for July 2019. (6)

[28]

QUESTION 3

3.1 The Departmental Head (DH) for sciences at Mbare high school is concerned with the performance of the 40 learners in grade 12E.
He presented the results for Mathematics and Physical Sciences using the box-and-whisker plots shown below.

GRADE 12E MATHEMATICS AND PHYSICAL SCIENCE RESULTS



[Adapted from original mark sheets]

Use the box-and-whisker plots above to answer the questions that follow.

3.1.1 Write down the difference between the highest and the lowest marks in Physical Sciences. (3)

3.1.2 Determine the probability, as a percentage, of randomly selecting a learner who scored less than 77% in Physical Sciences. (2)

3.1.3 Determine how many learners scored less than 30% in Mathematics. (3)

3.1.4 Determine in which subject the learners performed better.
Give a reason for your answer. (3)

3.2 TABLE 2 shows the results for selected subjects in the 2023 NSC examinations.

TABLE 2: RESULTS FOR SELECTED SUBJECTS

PROVINCE	MATHEMATICAL LITERACY		MATHEMATICS		PHYSICAL SCIENCES	
	Total wrote	% Achieved at 30% and above	Total wrote	% Achieved at 30% and above	Total wrote	% Achieved at 30% and above
Eastern Cape	50 658	80,6	43 021	57,4	31 894	75,0
Free State	20 223	89,7	12 845	69,9	10 339	80,2
Gauteng	84 337	86,3	42 773	69,1	32 317	77,9
Kwazulu-Natal	96 924	80,2	61 162	64,2	47 231	77,8
Limpopo	47 435	83,1	44 821	60,2	37 458	77,1
Mpumalanga	37 287	78,0	28 019	58,0	25 604	68,4
North West	28 840	82,3	11 126	66,7	**B**	76,4
Northern Cape	9 837	75,4	2 725	57,0	2 075	67,2
Western Cape	46 294	82,4	15 524	75,4	10 082	82,2
NATIONAL	**421 835**	**82,3**	**262 016**	**63,5**	--------	**76,2**

[Adapted from NSC 2023 school subject report]

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

3.2.1 Write down the number of provinces that performed below the national average pass percentage in Mathematical Literacy. (2)

3.2.2 Write down the modal pass percentage for Mathematical Literacy. (2)

3.2.3 Write the number of learners who wrote Mathematics in the Western Cape as a percentage of the total number of learners who wrote Mathematics. (4)

3.2.4 Calculate the median percentage of learners that achieved 30% and above in Physical Sciences. (3)

3.2.5 The average number of learners who wrote Physical Sciences in 2023 was 22 933.
Calculate, **B**, the number of learners that wrote Physical Sciences in North West. (5)

[27]

QUESTION 4

4.1 Lebogang owns his own bakery trading as *Lebs' Freshly Baked Pty Ltd*.
The bread is only sold in dozens.
ANNEXURE C shows the graph of the relationship of his total cost and income per week.

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

4.1.1 Determine the number of dozens he must sell before he starts making profit. (2)

4.1.2 Use the graph to write a formulae that can be used to calculate the total cost. (4)

4.1.3 Lebogang claimed that he will make more than R8 000 profit if he sells 200 dozen.
Verify, showing ALL calculations, whether his claim is valid. (6)

4.2 Lebogang realized that his business was growing and he decided to buy a delivery vehicle.
He has two options to finance the vehicle as shown in TABLE 3 below.

TABLE 3: TWO OPTIONS TO PURCHASE THE VEHICLE

OPTION 1	**OPTION 2**
CASH PRICE: R450 000 	HIRE PURCHASE: 20% deposit on cash price. R15 750 installment per month for 2,5 years.

[Adapted from www.moneyloans.co.za]

Use TABLE 3 above to answer the questions that follow.

4.2.1 Calculate the deposit amount for Option 2. (2)

4.2.2 Compare the cost of the two options.
Advice Lebogang on which option is better for him.
Show all your calculations. (6)

4.3 TABLE 4 below shows the annual sales for *Lebs' Freshly Baked Pty Ltd*. in 2020 and 2021.

TABLE 4: MONTHLY SALES IN THOUSANDS

MONTH	YEAR	
	2020	2021
	SALES (000)	SALES (000)
January	890	1 245
February	892	1 350
March	905	1 452
April	910	1 568
May	920	1 652
June	938	1 712
July	945	1 720
August	955	1 800
September	977	1 881
October	980	1 901
November	1000	1 950
December	1 150	2 145

[Adapted from www.smallbusinesssite.co.za]

NOTE: Sales were increasing yearly from January up until December.

Use TABLE 4 above to answer the questions that follow.

4.3.1 Determine the probability, as a simplified fraction, of randomly selecting a month with less than R1 000 000 total sales in 2020. (3)

4.3.2 The Inter Quartile Range (IQR) for the sales in October 2021 is R381 000. Quartile 1 (Q1) is R1 510 000.

Lebogang stated that the value of Quartile 3 is R1 891 000.

Verify, showing ALL calculations, whether his statement is correct.

You may use the following formula:

$$\mathbf{IQR = Q3 - Q1}$$

(4)
[27]

TOTAL: 100

ANNEXURE A

QUESTION 1.1

BANK ACCOUNT STATEMENT OF MS MODISE

Miss B.N MODISE
P.O Box 2940
Pinetown
3600

Royal State Bank
P.O Box 369
Vryheid
3100

Statement frequency: Monthly
Statement from 13 November 2023 to 12 December 2023

BANK STATEMENT/ TAX INVOICE

ELITE PLUS CHEQUE ACCOUNT Account number: 04 305 524 2 Statement no. 15

DETAILS	SERVICE FEE	DEBITS	CREDITS	DATE	BALANCE
Balance brought forward					6 493,01 -
Purchase fee	#	85, 00 -		24/11	**A** -
Credit transfer salary			37 150,23	25/11	30 572,22
Other bank ATM withdrawal at ABSA		500,00 -		25/11	30 072,22
Fee other bank ATM	#	6,70 -		25/11	30 065,52
Debit card purchase from Game		3 789,99 -		30/11	26 275,53
Iwyze insurance NAEDO debit		894,55 -		30/11	25 380,98
Service fee	#	3,50 -		30/11	25 377,48
Debit card purchase at Tile Mart		8 957, 00 -		01/12	16 420,48
Purchase fee	#	65,00 -		01/12	16 355,48
Closing balance				01/12	16 355,48

Fee structure
Overdraft details: Overdraft limit R8 000,00
Up to R3 000,00 at 14,750%
Above R3 000,00 at 17,750%

 # These fees are inclusive of VAT at 15%

[Adapted from www.standardbank.com]

ANNEXURE B

QUESTION 2.1

PERSONAL INCOME TAX RATES, TAX REBATES AND TAX THRESHOLDS FOR 2020/2021 (MARCH 2020 – 28 FEBRUARY 2021)

TAX RATES 2020/2021

TAXABLE INCOME (R)	RATES OF TAX (R)
1 - 205 900	18% of taxable income
205 901 – 321 600	37 062 + 26% of taxable income above 205 900
321 601 – 445 100	67 144 + 31% of taxable income above 321 600
445 101 – 584 200	105 429 + 36% of taxable income above 445 100
584 201 – 744 800	155 505 + 39% of taxable income above 584 200
744 801 – 1 577 300	218 139 + 41% of taxable income above 744 800
1 577 301 and above	559 464 + 45% of taxable income above 1 577 300

TAX REBATES 2020/2021

Primary (below 65)	R14 958
Secondary (65 and older)	R8 199
Tertiary (75 and older)	R2 736

TAX THRESHOLDS 2020/2021

Below age 65	R83 100
Age 65 to age 74	R128 650
Age 75 and older	R143 850

MONTHLY MEDICAL AID TAX CREDITS

Main member	R319
First dependant	R319
Each additional dependant	R215

[Adapted from www.sars.za]

ANNEXURE C

QUESTION 4.1