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# **NATIONAL SENIOR CERTIFICATE**

## **GRADE 12**

### **SEPTEMBER 2024**

## **MATHEMATICAL LITERACY P1**

**MARKS: 150**

**TIME: 3 hours**

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This question paper consists of 16 pages, including 2 answer sheets and 2 annexures.

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**SA EXAM  
PAPERS**

**INSTRUCTIONS AND INFORMATION**

1. The question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDEDUM included in the QUESTION PAPER to answer the following questions:  
  
ANNEXURE A for QUESTION 1.1  
ANNEXURE B for QUESTION 2.1
3. Answer QUESTION 3.2.3 and 4.1.2 on the answer sheets provided. Write your name and surname in the space provided in the ANSWER SHEET and hand in the ANSWER SHEETS with your ANSWER BOOK.
4. Start EACH question on a NEW page.
5. Number the answers correctly according to the numbering system used in this question paper.
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 ALL final answers according to the context used, unless stated otherwise.
10. Write neatly and legibly.

**QUESTION 1**

1.1 Use ANNEXURE A to answer the following questions.

1.1.1 Calculate the value of **A**. (2)

1.1.2 Define the term *opening balance*. (2)

1.1.3 Show how the income of R6 602,70 was calculated. (2)

1.1.4 Calculate the value of **B**. (2)

1.1.5 Write the total expenditure in words. (2)

1.1.6 Determine the difference between the maximum and minimum October expenditure. (3)

1.2 The Matric Dance Fundraising Committee bought 4 boxes of pens and sold each pen at R5,00 each.



1.2.1 Calculate the cost of one black pen. (2)

1.2.2 Determine the profit made on one black pen. (2)

1.2.3 Calculate the number of pens that were sold during the fundraising. (2)

1.2.4 Determine the percentage profit from selling one black pen. (2)

1.2.5 Determine the probability of randomly selecting a red pen in one of the boxes that have been bought. (2)

- 1.3 Mrs Jones bought a bomber jacket on 24 November 2023, on Black Friday. The cost of the bomber jacket is shown below.

	<p><b>BOYS BOMBER JACKET</b></p> <p>Was: R499,00 (VAT incl.)</p> <p>Now: R336,75</p>
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- 1.3.1 Which day of the week is Black Friday? (2)
- 1.3.2 Determine the percentage discount that was offered on the bomber jacket. (3)
- 1.3.3 Determine what the VAT exclusive price of the bomber jacket was. (2)

**[30]**

**QUESTION 2**

- 2.1 Pie Sese received her employee income tax certificate information for the financial year ending 2023/02.  
This information is on ANNEXURE B. Some information has been omitted.

Use ANNEXURE B to answer the questions that follow.

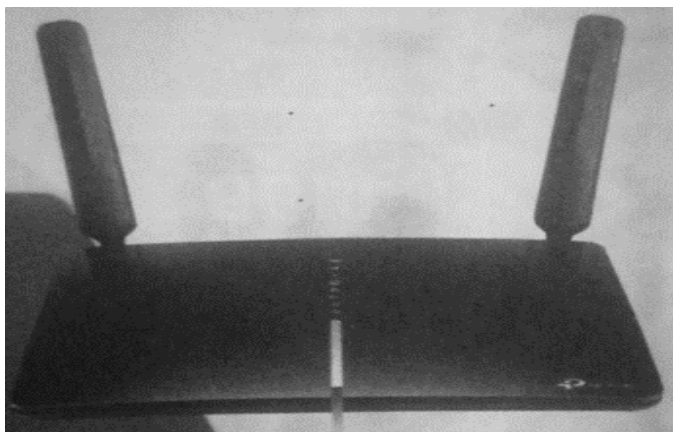
- 2.1.1 Write down the annual taxable payment amount that Pie Sese received. (2)
- 2.1.2 Calculate the monthly medical aid tax credit fees. (2)
- 2.1.3 Pie contributed 36,5% to her pension fund from 1 March 2023 to 30 September 2023. Determine the average monthly contribution for the remainder of the financial year. (5)
- 2.2 Joy needs a laptop, which costs R5 999,00. She asked for the money from her sister who lives in the United States of America. The exchange rate was as follow:  
R1 = 0,05 US dollar.
- 2.2.1 Explain the term *exchange rate*. (2)
- 2.2.2 Was the ZAR stronger or weaker against the US dollar? (2)
- 2.2.3 Joy's sister gave her 300 US dollars to buy a new laptop. She stated that the money would be enough to purchase the laptop.  
Verify, showing ALL calculations, if Joy's sister is correct. (3)
- 2.3 Mrs Teddy went to check the maturity value towards her retirement annuity, as she will be turning 55 in 4 months' time. She expects to receive her lump sum when she turns 55.
- The sales lady informed her that the maturity value is R334 159, and she will receive  $\frac{1}{3}$  of this lump sum. This is because as from 2017 South African law stated that if a lump sum exceeded R247 500, a person will receive  $\frac{1}{3}$  of the total lump sum and thereafter will receive equal instalments.
- Mrs Teddy decided to invest the  $\frac{1}{3}$  of her lump sum at 9% p.a. compounded half yearly for 2 years.
- 2.3.1 Calculate the amount Mrs Teddy will receive when she turns 55 years old. (3)
- 2.3.2 Mrs Teddy says that the interest she will receive after 2 years is R24 500. Verify, showing ALL calculations, that her statement is valid. (8)

- 2.4 Mr Walker, the owner of Ray Restaurant, wants to install Wi-fi as part of increasing the business. He received two options to choose from. The options are shown in the table below:

**TABLE 1: BUSINESS INTERNET OPTIONS**

BUSINESS INTERNET LTE	24 MONTHS CONTRACT	SAVINGS
10 Mbps	R299 pm	Save R3 600
20 Mbps	R399 pm	Save R6 000

BUSINESS INTERNET FIBRE-OPTIC	24 MONTHS CONTRACT	SAVINGS
20 Mbps	R549 pm	Save R2 400
50 Mbps	R749 pm	Save R2 400



**Mbps – Megabits per second**

Mr Walker wants to buy 40 Mbps. The sales representative offered him the following options:

- Buying FOUR 10 Mbps LTE
- Buying TWO 20 Mbps LTE

He found out that it's cheaper to buy 50 Mbps fibre-optic than it is to buy 40 Mbps LTE. Verify, by means of calculations, if Mr Walker's statement is valid.

(8)  
[35]



**QUESTION 3**

- 3.1 The Minister of Basic Education in her address stated that, there has been a significant improvement in the performance of all subjects, EXCEPT a few.

TABLE 2 below represents the subjects with high enrolment. Improvement was noted in all subjects, EXCEPT History and Mathematical Literacy.

**TABLE 2: COMPARISON OF PERFORMANCE IN SUBJECTS 2022 AND 2023**

SUBJECT DISCRIPTION	2022	2023	DIFFERENCE IN PERCENTAGE FROM 2022 TO 2023
Accounting	75,4%	76,9%	1,5%
Agricultural Sciences	75,8%	80,5%	4,7%
Business studies	76,7%	81,8%	5,1%
Economics	71,5%	<b>B</b>	3,0%
Geography	81,3%	86,2%	4,9%
History	88,2%	87,7%	-0,5%
Life Sciences	71,5%	75,6%	4,1%
Mathematical Literacy	85,7%	82,3%	<b>A</b>
Mathematics	55,0%	63,5%	8,5%
Physical Sciences	74,6%	76,2%	1,6%

Use the table above to answer the questions that follow.

- 3.1.1 Calculate the value of **A**. (2)
- 3.1.2 Which subject has the largest percentage decrease between 2022 and 2023? (2)
- 3.1.3 Calculate the range of the differences in percentages. (4)
- 3.1.4 The mean percentage of the 2023 performance in all the subjects is 78,52%. Determine the value of **B** using all 10 subjects. (4)
- 3.1.5 Write the probability of randomly selecting a subject(s) with a decrease in percentage, as a decimal. (3)



- 3.2 The table below represents the scores for the 2023 Rugby World Cup quarter-finals, semi-finals and final.

**TABLE 3: 2023 RUGBY WORLD CUP QUARTER-FINAL, SEMI-FINAL AND FINAL SCORES**

QUARTER-FINALS			SEMI-FINALS		FINAL	
GAMES	TEAMS	SCORES	TEAMS	SCORES	TEAMS	SCORES
1 <sup>st</sup> game	Wales	17	Argentina	6	New Zealand	11
	vs Argentina	29	vs			
2 <sup>nd</sup> game	Ireland	24	New Zealand	44	vs	12
	vs New Zealand	28				
3 <sup>rd</sup> game	England	30	England	15	A	
	vs Fiji	24	vs			
4 <sup>th</sup> game	France	28	South Africa	16		
	vs South Africa	29				

Use the table above to answer the questions that follow.

- 3.2.1 Which team is represented by **A** in the FINAL game? (2)
- 3.2.2 Identify the team with the highest score in the semi-final games. (2)
- 3.2.3 Draw a double bar graph for the scores in the quarter-finals on ANSWER SHEET 1 provided. (6)
- 3.2.4 Identify the modal score in the semi-finals. (2)

[27]

## QUESTION 4

- 4.1 Mrs Shield wants to start an internet café as a small business. She wants to start by printing school magazines that will need colour printing for pictures of school events. She wants to hire a photocopy machine, and approached two shops that sell office equipment. At Umlazi Office Equipment she saw a big Olivetti d-MF2555 photocopier machine. At Queens Shop she saw the Canon MG 2500 series printer.



The offers for renting the machines are given below:

RENT OFFER 1: Umlazi Office Equipment	RENT OFFER 2: Queens Shop
<b>RENTAL:</b> R450,00 per month ➤ R0,12c excl. VAT per black print ➤ R0, 70c incl. VAT per colour print  <b>Includes: Toners, service, spares, transport and labour.</b>	<b>RENTAL:</b> R350,00 per month ➤ R0,20 per black print ➤ R0,90 per colour print  <b>Includes: Service of the machine, toners, spares, transport and labour.</b>

- 4.1.1 Define the term *variable cost* in the given context. (2)
- 4.1.2 Write down the equations for colour printing for both companies. (4)
- 4.1.3 Complete the table and DRAW a line graph for both options on ANSWER SHEET 2, using the cost equation in QUESTION 4.1.2. (9)
- 4.1.4 How many copies must be printed for the two companies to have the same cost? (2)
- 4.1.5 Which company should Mrs Shield rent the photocopying machine from? (2)

- 4.2 TABLE 4 below represents the results of Primary School Field Events. Primary Schools took part in the regional 2024 competition.

**TABLE 4: FIELD EVENTS RESULTS FOR PRIMARY SCHOOL**

<b>GENDER</b> →	<b>BOYS</b>				<b>GIRLS</b>			
<b>EVENTS</b> ↓	<b>10 years</b>	<b>11 years</b>	<b>12 years</b>	<b>13 years</b>	<b>10 years</b>	<b>11 years</b>	<b>12 years</b>	<b>13 years</b>
<b>SHOT PUT</b>	9,00 m	11,30 m	11,00 m	11,50 m	8,00 m	9,70 m	9,60 m	10,20 m
<b>HIGH JUMP</b>	1,24 m	1,34 m	1,48 m	1,54 m	1,18 m	1,30 m	1,40 m	1,48 m
<b>LONG JUMP</b>	4,10 m	4,50 m	4,80 m	5,20 m	3,80 m	4,10 m	4,40 m	4,60 m

- 4.2.1 Explain, with justification, whether the data is discrete or continuous? (3)
- 4.2.2 Which age group has the highest results? (2)
- 4.2.3 Explain why the results for the high jump event is lower than the results of the shot put and long jump events. (3)
- 4.2.4 The range for all ages in the long jump events suggests that the results are grouped closer to the median. Verify, by showing ALL calculations, whether the statement is correct. (6)

[33]

## QUESTION 5

5.1 The water account Mrs Wales received from Ndondo Municipality is provided below.

TABLE 5: MRS WALES' WATER ACCOUNT

The Ndondo Municipality

Private bag X1937  
Tel: (011) 2328910

Street address	Client Name	Invoice Number		
6 Edenvale Flat	Mrs L Wales	AVE-40103652		
Date	Consumption Details	Charge (in Rands)	VAT (15%)	Grand Total Due
15/12/2023	32 kℓ	...		

Kilolitres	Tariff (per kℓ) (VAT exclusive)
0–6 kℓ	R18,12/kℓ
7–15 kℓ	R29,26/kℓ
16–30 kℓ	R36,58/kℓ
31+ kℓ	R45,52/kℓ
Sanitation (excl. vat)	R59,96

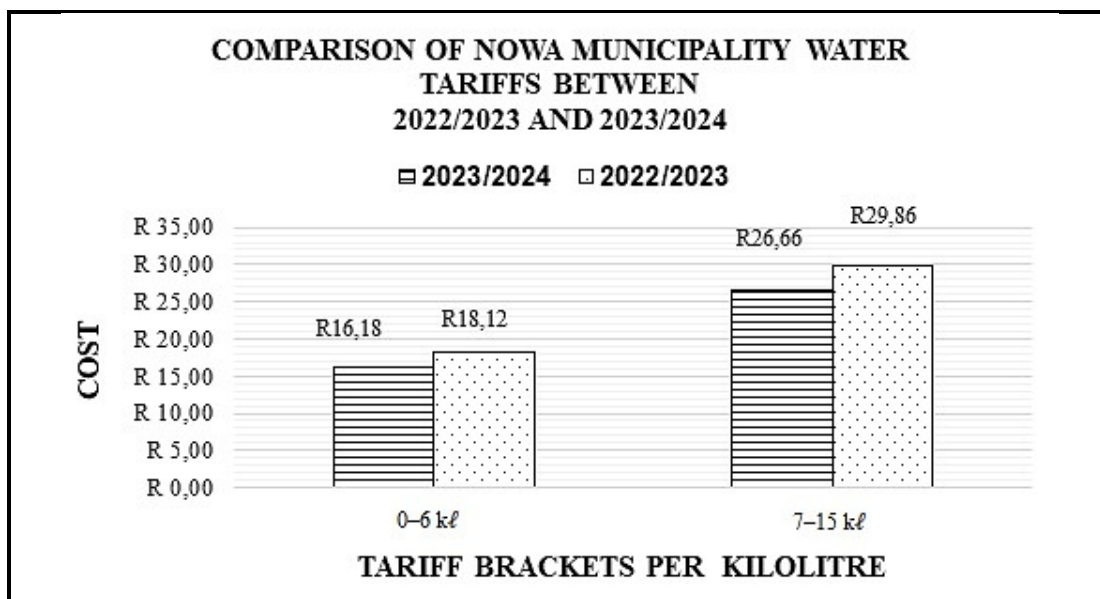
Previous consumption statistics:

SEP	OCT	NOV
30 kℓ	34 kℓ	36 kℓ

5.1.1 Calculate the amount charged for water, including VAT, that Mrs Wales used in December. (8)

5.1.2 Calculate the median tariffs per kilolitre. (3)

5.2



Which tariff bracket had a higher percentage increase when Nowa municipality increased the water tariffs from 2022/2023 to 2023/2024?

(7)

5.3

The Consolidated Government expenditure by function for 2023/2024 and 2024/2025 is illustrated in the table below. Some information has been omitted.

**TABLE 6: CONSOLIDATED GOVERNMENT EXPENDITURE BY FUNCTION**

R billion	2023/2024	2024/2025
	REVISED ESTIMATES	MEDIUM TERM ESTIMATION
Learning and culture	468,4	480,6
Health	267,3	271,9
Social development	368,5	387,3
Community development	251,5	265,3
Economic development	239,8	255,4
Peace and security	236,8	244,0
General public service	76,9	74,7
Payments for financial assets	3,5	2,6

Calculate the interquartile range for 2024/2025 medium term estimation.

(7)

[25]

**TOTAL: 150**