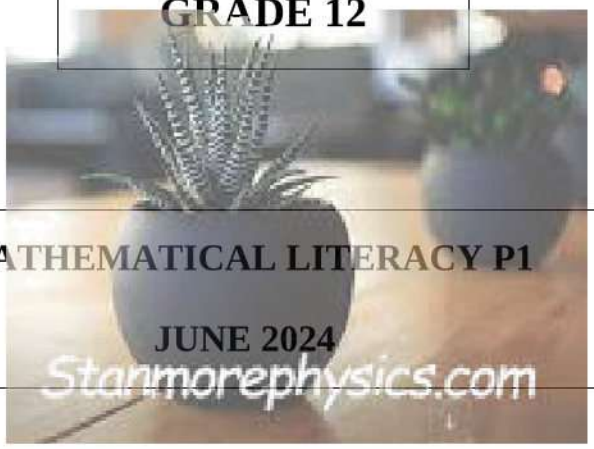
education

MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12



MATHEMATICAL LITERACY P1

JUNE 2024

MARKS: 100

TIME: 2 hours

This question paper consists of 11 pages, and an addendum with 2 annexures.

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INSTRUCTIONS AND INFORMATION

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

   ANNEXURE A for QUESTION 1.3
   ANNEXURE B for QUESTION 4.1.2
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.

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QUESTION 1

1.1 Carwow is a magazine that brings the best offers from thousands of trusted cars over the years. Owners of vehicles can get help to change their cars online.

TABLE 1 below shows a comparison on the performance of 2024 hot hatchbacks that South Africa dealerships are selling nationwide.

TABLE 1: COMPARISON OF 2024 HOT HATCHBACKS SOLD IN SOUTH AFRICA.

VEHICLE NAME	KILOWATTS	NEWTON METRES	ACCELERATION IN SECONDS	
			0−100km/h	0−200km/h
VW Golf 8 R DSG	235	400	4,81	17,49
Hyundai i30 N DCT	206	392	5,51	22,03
Toyota Corolla GR	221	370	5,59	21,20
Renault Megane RS	165	380	6,5	22,0
Mercedes Benz A45s	310	500	3,9	14,5
Audi RS3	294	500	3,8	13,7
BMW 135i	225	400	4.8	18,80

www.carwow.co.za

NOTE:
Kilowatt – how much power a motor of a car puts out.
Newton metre- - the pulling power of a car when accelerating,

Use TABLE 1 above to answer the questions that follow.

1.1.1 State whether the values for the acceleration in seconds in the table are discrete or continuous data. (2)

1.1.2 Arrange, in ascending order, the 0−100km/h acceleration in seconds. (2)

1.1.3 The mode of the newton metres is 400 and 500.

Define the term mode in this context. (2)

1.1.4 Determine the median of the kilowatts of all the vehicles. (2)

1.1.5 Write down the third highest 0−200km/h acceleration in seconds. (2)

1.1.6 Calculate the difference of the 0−100km/h between the Toyota Corolla GR and the VW Golf 8 R DSG. (2)

1.1.7 Determine, as a unit ratio, in the form **……..:** 1, the Audi RS3 kilowatts to the newton meter of Hyundai i30 N DCT. (3)

1.2 The Mpumalanga Department of Education has, in 2023 during the winter and spring classes, intervened to try an uplift the performance of schools that performed below the 70% pass rate in 2022.

TABLE 2 below shows an extract of the amounts the Head of Department approved to try and change the outlook of the Matric 2023 results to be released in January 2024. Some values have been omitted.

TABLE 2: AMOUNTS EARMARKED BY THE HEAD OF DEPARTMENT OF THE MPUMALANGA DEPARTMENT OF EDUCATION TO MITIGATE ON POOR PERFORMANCE BY SCHOOLS THAT PERFORMED UNDER THE 70% PASS RATE

DISTRICT	LEARNER TRANSPORT	NSNP FEEDING	FOOD HANDLERS	TOTAL
Bohlabela	R1 200 000	R243 933	R30 575	R1 474 508
Ehlanzeni	R260 000	R338 657	R42 224	…….
Gert Sibande	R1 500 000	R2 669 814	…….	R4 203 302
Nkangala	R1 200 000	R391 983	R49 504	R1 641 487
TOTAL	**R4 160 000**	**R3 644 387**	**R155 791**	**R7 960 178**

An extract of amounts from the request made to the HOD MDoE to uplift the 2023 Matric results

Use TABLE 2 above to answer the questions that follow.

1.2.1 The total of all districts for the NSNP feeding is R3 644 387.

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

1.2.2 Determine the amount of money allocated to Gert Sibande district`s food handlers. (3)

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1.2.3 The probability of an amount above R1,2 million for the learner transport for the four districts is 0,25.

Express this probability as a fraction in its simplest form. (3)

1.3 GEMS (Government Employees Medical Scheme) released its financial statement showing the cash flow on 31st December 2022.

ANNEXURE A shows the statement cash flows as at 31 December 2022.

Use ANNEXURE A to answer the questions that follow.

1.3.1 Write down the amount for the disposal of the financial assets in 2021 using the word billion. (2)

1.3.2 Express the cash at the beginning of the year in 2022 to the cash paid to suppliers, members and employees in 2021 as a percentage. (3)

1.3.3 In which year was the purchase of financial assets the most? (2)

[30]

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QUESTION 2

2.1 Mandla wants to buy a used 2023 Mazda CX−3 from Nelspruit Auto (Mbombela). An extract of the quotation is shown below. Some values have been omitted.

AN EXTRACT OF THE QUOTATION FOR THE 2023 MAZDA CX−3:

Description	**Rand (R)**
Selling price (excluding VAT) without accessories (extras)	301 259,00
Discount	……..
ACCESSORIES (EXTRAS)	
Smash and grab film	3 749,75
Paint protector	3 250,25
OTHER CHARGES	
Registration	4 500,00
On road charges	4 389,00
Transactional fee	1 615,00
SUB TOTAL	……
VALUE ADDED TAX	**15%**
TOTAL AMOUNT DUE	**366 577,45**

Use the extract above to answer the questions that follow.

2.1.1 Calculate the discount amount if it is 1,859% of the value of the 2023 Mazda CX−3. (3)

2.1.2 Give TWO reasons why would a customer want to install the smash and grab (extra), as shown in the quotation. (2)

2.1.3 The total amount due is R366 577,45 VAT inclusive.

Determine the VAT amount payable. (3)

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2.1.4 Mandla worked as a principal and received a retirement lump sum of R2,17546 million. He invested the money with ABC bank. He wanted to use the amount of interest he will earn to buy the 2023 Mazda CX−3.

The money was invested as follows:

30 months investment period.
6,5% interest per annum, compounded annually.

Calculate the amount of interest that Mandla will earn at the end of the thirty months investment period. (9)

2.2 Samukelisiwe took her family on a tour to Kruger National Park. They camped at Satara rest camp which has different accommodation types and rates.

TABLE 3 below shows the rates at Kruger National Park as at 17 December 2023.

TABLE 3: RATES AT KRUGER NATIONAL PARK.

SATARA ACCOMODATION RATES PER DAY			
Guest Cottage GC6B	R2 490 for 4 persons	R430 Additional adult	R215 additional child
KRUGER NATIONAL PARK CONSERVATION FEE PER DAY			
South African Citizen	R93 per adult	R47 per child	
ACTIVITIES			
Morning walk	R535 per adult	Not applicable per child	
Night drive	R240 per adult	Not applicable per child	

[www.sanspark.org]

Use TABLE 3 above to answer the questions that follow.

2.2.1 Samukelisiwe calculated that the cost of accommodation at Guest Cottage GC6B for 5 adults and one child for 3 days including the conservation fee for South African citizen will be R10 941.

Verify whether her calculation is correct. (7)

2.2.2 Calculate the total cost of a return trip from Durban which is 725 km away from Kruger National Park, if the petrol consumption is 8 litres per 100 km and the cost of petrol is R16,79 per litre. (6)

[30]

QUESTION 3

3.1 Statistics South Africa conducts census every year in order to establish the population of South Africa.

TABLE 4 shows the population and land area of South Africa in 2023

TABLE 4: POPULATION AND LAND AREA OF SOUTH AFRICA IN 2023

PROVINCES	POPULATION SIZE	POPULATION %	LAND SIZE (KM SQUARES)	% LAND AREA
EASTERN CAPE	6 678 964	11,06	168 966	13,80
FREE STATE	2 916 197	4,83	129 825	**C**
GAUTENG	16 069 092	26,60	18 178	1,50
KWAZULU NATAL	11 518 288	**B**	94 361	7,70
LIMPOPO	5 887 980	9,75	125 755	10,30
MPUMALANGA	**A**	7,83	79 495	6,50
NORTH WEST	4 109 533	**……**	104 882	8,60
NORTHERN CAPE	1 282 845	2,12	372 889	30,50
WESTERN CAPE	7 219 826	**……**	129 825	**C**
SOUTH AFRICA	**60 414 495**	**100**	**1 224 176**	**100**

[Adapted from Inside Education 2023 Matric Exam Guidelines October 2023]

Use TABLE 4 above to answer the questions that follow.

3.1.1 Write down the province with the third lowest land size in square kilometres. (2)

3.1.2 Identify the province with the highest population size.

Why do you think the province has the highest population size? (2)

3.1.3 Determine the value of **A**. (3)

3.1.4 When the population sizes are calculated using the population percentages in the table, one cannot find the exact population sizes as indicated in the table.

Give the reason why that is happening. (2)

3.1.5 Calculate the value of **B**, the % population. (3)

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3.1.6 The mean of % land area is 11.

The % land area of Free State and Western Cape, rounded off to two decimal places, is 10,55.

Verify, showing ALL calculations, whether the statement is correct or not. (4)

3.1.7 The population of South Africa in 2023 has increased by 0,87% from 2022.

Determine the population of South Africa in 2022. (4)

[20]

QUESTION 4

4.1 Sam is a deputy principal and wishes to retire at the end of February 2024. Government Employees Pension Fund gave him an estimated value of R4 127 346 if he goes on retirement as at 29 February 2024.

Table 5 below shows the two options to consider.

TABLE 5 SHOWING THE TWO OPTIONS FOR RETIREMENT.

OPTION 1	OPTION 2
Withdraw a third of the full pension fund benefit	Withdraw 100% of the full pension fund benefit

ANNEXURE B shows the SARS tax rates for 2023/2024.

Use TABLE 5 and ANNEXURE B to answer the questions that follow.

4.1.1 An official told Sam that the amount of money that Sam can withdraw if he chooses option 1 will be R1 375 782.

Verify, showing ALL calculations, whether the official was correct. (3)

4.1.2 Sam decides to choose Option 2 as he wants to invest the money at a financial banking institution.

Calculate the amount of tax that Sam will pay if the estimated value of his pension fund is R4 127 346. (5)

4.2 Sam wants to give his daughter a certain amount of money after receiving his money when choosing option 2.

4.2.1 The ratio of the estimated value of Sam`s full pension (before tax) to his daughter is 9,8891:1.

Determine, to the nearest thousand rand, the amount that his daughter will receive from her father. (4)

4.2.2 Choose below the probability of the amount of money Sam`s daughter would receive.

0 **less likely** **Even** **Most likely** **100%** (2)

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4.3 TABLE 6 shows the exchange rate between South Africa and Britain as at 19 December 2023.

TABLE 6: EXCHANGE RATE BETWEEN SOUTH AFRICA AND BRITAIN

CURRENCY	UNITS PER ZAR	ZAR PER UINT (POUND)
British pound	0,04212672562	23,7379

[www.standardbank.co.za/forex]

Show how 0,04212672562 ZAR per unit was determined. (2)

4.4 Volkswagen group worldwide registered the number of 2023 Golf 8 units sold in nine countries during August to November 2023.
[Adapted – Source www.carwow.co.za]

The interquartile range for the 2023 Golf 8 units sold in these countries is 62 467,5 and the value of Quartile 3 is 149 395,5.

Calculate the value of Quartile 1. (4)

[20]

TOTAL: 100

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NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

ADDENDUM

JUNE 2024

Stanmorephysics.com

MARKS: 100

This addendum consists of 3 pages and 2 Annexures.

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ANNEXURE A
QUESTION 1.3

GEMS STATEMENT CASH FLOWS AS AT 31 DECEMBER 2022

	2022 R`000	2021 R`000
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash receipts from members	47,753,395	47,908,493
Cash paid to suppliers, members and employees	(47,646,126)	(46,669,232)
Cash generated from operations	107,269	1,239,261
Interest expense	(406)	(702)
Net cash inflow from operating activities	**106,863**	**1,238,559**
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of property and equipment	(1,890)	(6,039)
Proceeds from sale of property, plant and equipment	107	28
Purchase of financial assets	(27,206,829)	(23,081,664)
Disposal of financial assets	26,504,922	21,030,000
Investment income	1,614,977	1,230,915
Interest received on Scheme cash invested	52,010	36,554
Interest earned on financial assets at fair value profit or loss	1,288,878	972,592
Dividends	162,996	92,906
Realised gains	111,093	128,863
Net cash from (used in) investing activities	**911,287**	**(826,760)**
CASH FLOWS FROM FINANCING ACTIVITIES		
Payment on lease liabilities	(5,440)	(6,706)
Total cash movement for the year	**1,102,710**	**405,093**
Cash at the beginning of the year	3,170,701	2,765,607
Total cash at the end of the year	**4,183,411**	**3,170,701**

Part 09 statement of responsibility and extract from 2022 AFS

Stanmorephysics.com

ANNEXURE B

QUESTION 4.1.2

TAX RATES FOR 2023/2024 TAX YEAR
(1 MARCH 2023 TO 28 FEBRUARY 2024)

2023/2024 SARS Tax Table		
Taxable Income (R)	Rate of Tax (R)	
0 – 237 100	18% of taxable income	
237 101 – 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	
Tax Rebates	Value	Tax Threshold
Primary rebate:	R17 235	R95 750
Secondary rebate: (Persons 65 to 74 of age)	R9 444	R148 217
Tertiary rebate: (Persons 75 years and older)	R3 145	R165 689
Monthly Medical Scheme Fees Tax Credits		
Main member	R364	
First dependant	R364	
Each additional dependant	R246	

www.sarstaxtables.co.za

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