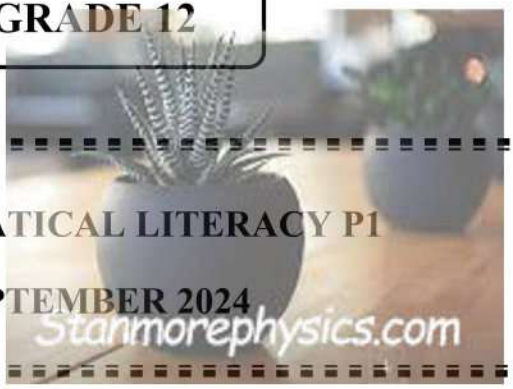
education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12



MATHEMATICAL LITERACY P1

SEPTEMBER 2024

MARKS: 150

TIME: 3 hours

This question paper consists of 11 pages and an addendum with 5 annexures.

Copyright reserved

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.

2. Use the ANNEXURES in the ADDENDUM to answer the following questions:

   ANNEXURE A for QUESTION 1.2
   ANNEXURE B for QUESTION 2.1
   ANNEXURE C for QUESTION 3
   ANNEXURE D for QUESTION 4.1
   ANNEXURE E for QUESTION 5.2

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.

Copyright reserved

QUESTION 1

1.1 Camino de Santiago (pilgrimage) is an ancient pilgrimage trail originating in the medieval times. Made up of a vast network of roads and paths, pilgrims travel (walk) to arrive at the cathedral of Santiago de Compostela. The Camino was and still is Europe's oldest, busiest, and most well-known route.

Gordon and Jane did the Camino pilgrimage from St Jean Pied de Port in France to Santiago de Compostela in Spain. They walked a total distance of 800 km. They walked for 34 days consecutively. Every evening they slept at different villages. Gordon used his Garmin watch to keep track of their every day's progress.

Below is an extract of the last 6 days (from Tricastela to Compostela de Santiago) of their route's information.

TABLE 1: PROGRESS OF GORDON AND JANE's LAST 6 DAYS

DAY	Steps	Activity time	Distance in km	Calories
Day 29	31 153	5:53:39	25,21	2 194
Day 30	28 732	5:19:34	22,80	2 228
Day 31	32 697	5:56:53	25,46	2 293
Day 32	36 629	6:53:46	29,47	3 280
Day 33	25 414	4:44:12	20,28	2 084
Day 34	27 932	4:49:37	20,90	2 765
Total	**A**	**33:37:41**	**144,12**	**14 844**

[Adapted from Camino de Santiago 2023/2024 Facebook]

Use TABLE 1 above to answer the questions that follow.

1.1.1 Calculate the total number of steps (**A**) they had for the last six days. (2)

1.1.2 Determine the difference in calories between day 32 and day 29. (2)

1.1.3 Write down the second longest activity time they spent walking. (2)

1.1.4 Arrange the distance in kilometers from day 29 to day 34 in descending order. (2)

1.1.5 Write the calories of day 33 and day 32 as a ratio in its simplest form. (3)

1.1.6 Calculate the kilometers of day 32 as a percentage of the total number of kilometers they walked in the last 6 days. (3)

Copyright reserved

1.2 Agnetia is planning to move to Johannesburg. She studies the electricity tables to decide which paying option to use. ANNEXURE A presents the table on the Residential Prepaid option as well as a Residential Conventional option.

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

1.2.1 Write down the assumed monthly kilowatt usage for both Prepaid and Conventional. (2)

1.2.2 Name the TWO extra charges included in the Residential Conventional that is not in the Prepaid method. (2)

1.2.3 Convert the tariff for 500 kilowatts of the Residential Prepaid system to rand. (2)

1.2.4 Determine the difference between the average selling price (c/kWh) for Residential Prepaid and Residential Conventional VAT included. (3)

1.2.5 Show how the value of block 2 (VAT Excl.) for R313,79 on the Residential Prepaid system was calculated. (3)

[26]

QUESTION 2

2.1 Amancio Gonzalez, a motivational speaker provides schools with motivational books for learners that improved the most during the year. The list of Amancio's Top 9 Motivational books are displayed in ANNEXURE B.

The books marked with a hashtag **(#)** was on sale.

All prices include 15% VAT.

Stanmorephysics.com

The authors gave a further 7,25% sales discount if more than 200 books per author were bought.

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

2.1.1 Write down the name of the book that was written by Robin Sharma. (2)

2.1.2 Determine the percentage discount if, *The 7 Habits for Highly Effective People* were sold for R249 each. (4)

2.1.3 Calma bought 5 copies of the cheapest books displayed as well as 7 copies of the second most expensive books. Calculate the total cost for the twelve books VAT excluded. (6)

2.1.4 School A requested 225 copies of *Tuesdays with Morrie* to use as a prescribed book. The school has a budget of R41 150 to purchase the books.

The English teacher stated that they will NOT have enough in the budget to purchase the 225 books.

Verify showing ALL calculations, whether the statement of the teacher is CORRECT. (6)

2.1.5 Determine the probability that a book cost less than R280. Write your answer as a decimal number rounded to two decimal places. (3)

2.2 Three pen pals from different countries decided to do the Camino from Portugal to Santiago de Compostela. Dario is from Japan; Catalina originally from Spain (but lives in the UK) and Jan is from South Africa.

Dario decided to take ¥ 246 900, Catalina took £1 400 and Jan took R32 750 to use as spending money.

TABLE 3: CURRENCIES ON 6 SEPTEMBER 2023

1€	R20,5669	€ - Euro
1€	£0,85304601	£ - British Pound
R1	¥7,6764314	¥ - Japanese Yen
1€	¥157,86242	R - ZAR

[Adapted from https://xecurrencyconverter]

Stanmorephysics.com

Use TABLE 3 above to answer the questions that follow.

2.2.1 Name TWO factors that influences the exchange rate of a country. (2)

2.2.2 Convert 1 Japanese Yen (¥) to Euro (€). (2)

2.2.3 Dario will be using $\frac{3}{7}$ of his spending money for accommodation. Determine the amount he will have left for food and spending money in Yen. (4)

2.2.4 Calculate how many euros each of the friends will receive for the amount they decided to take with as spending money and write down the name of the person who will have the most euros. (7)

[36]

QUESTION 3

3 A survey was made on the number of Pilgrims that completed the Camino de Santiago in the years 2019 to 2022. The survey is displayed on ANNEXURE C.

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

3.1 Write the total number of all the Pilgrims from 2019 to 2022 in words. (2)

3.2 Explain the term *survey*. (2)

3.3 Write down the number of Pilgrims that completed the Camino de Santiago in September 2019. (2)

3.4 Calculate the value of **A**, Pilgrims who walked the Camino in August 2020. (3)

3.5 The range of the monthly total number of Pilgrims that took part in the Camino de Santiago from 2019 to 2022 was 206 716.

Use the concept of range to determine the lowest total value of the Pilgrims from 2019 to 2022 (value **B**). (3)

Stanmorephysics.com

3.6 Calculate the mean number of Pilgrims that completed the Camino de Santiago in the year 2021. (3)

3.7 Alexander one of the Pilgrims stated that there was 10% more Pilgrims that completed the Camino de Santiago in 2022 than in 2019 out of the total number of Pilgrims that completed from 2019 to 2022.

Verify, showing ALL calculations, whether the statement is CORRECT. (8)

3.8 Determine the probability that more than 50 000 Pilgrims completed the Camino de Santiago per month in the year 2022.

Write your answer as a percentage rounded to the nearest whole number. (3)

[26]

QUESTION 4

4.1 Mr Alejandro teaches Spanish to three groups of students. At the end of the year, he displays the results in box and whisker diagrams to compare the results. He analyses the results and then finds alternative methods to increase the results.
Study the display of his results for 2023 on ANNEXURE D.

Use ANNEXURE D to answer the questions that follow.

4.1.1 State what percentage the box represents in the box and whisker diagram. (2)

4.1.2 Write down the outlier as well as the class in which it occurred. (3)

4.1.3 Which values are used to draw the box and whisker diagram? (2)

4.1.4 Alejandro states that Class B's IQR is 7,5% more than the IQR of Class A and C combined.

Verify, showing ALL calculations, whether his statement is CORRECT. (8)

4.1.5 Use the measures of central tendency or spread to determine which class performed the best.

State the measure of central tendency or spread and give a reason for your answer. (4)

4.2 Morne has a business on the side where he makes charcuterie boards out of special wood. He purchases sheets of the special wood and cut them to size and finishes the wood off with a special oil. He sells these charcuterie boards at different markets across the country for R450 each.





TABLE 5: INCOME AND EXPENSES OF MORNE'S CHARCUTERIE BOARDS BUSINESS

Number of charcuterie boards	0	5	15	25	50	85
Income (Rand)	0	2 250	**A**	11 250	22 500	38 250
Expenses (Rand)	2500	3 375	5 125	**B**	11 250	17 375

*Charcuterie board: A cutting board made of wood (also known as a chopping board).

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

4.2.1 Determine the cost of ONE charcuterie board. (3)

4.2.2 Calculate the values for **A** and **B**. (4)

4.2.3 Write a formula to determine the expense (Rand) for the charcuterie boards. (2)

4.2.4 Determine how many charcuterie boards needs to be sold before Morne shows a profit. Show ALL calculations. (5)

4.2.5 Name TWO possible factors that influence fixed cost in this context. (2)
[35]

QUESTION 5

5.1 **SOLAR PANEL TAX INCENTIVE FOR INDIVIDUALS**

The Government proposes a program which can supplement electricity supply. Individuals will be able to claim a rebate value of 25% of the cost of a new and unused solar photovoltaic(PV) panel, up to a maximum of R15 000 per individual. The rebate applies to qualifying solar PV panels that are bought into use for the first time in the period from 1 March 2023 to 29 February 2024.



[Adapted from: 2023 budget faqs- solar panel tax incentive]

Study the information and advertisement above and answer the questions that follow.

5.1.1 Write down the number of panels as well as the power of the panels shown in this special offer. (2)

5.1.2 During what period will a person qualify for this special rebate option? (2)

5.1.3 Tom plans to purchase the special offer. Determine the rebate amount that Tom can qualify for if a single panel costs R4 000. (4)

5.1.4 Tom does not have the cash amount of R85 000 and applied for a loan at Bank A. He can get the loan at 12,5% interest over a two-year period compounded yearly.

Calculate Toms monthly repayment amount. (6)

Copyright reserved

5.2 Dante Salvador is 71 years of age. He is registered with SARS and pays his annual tax promptly. He is married and lives with his wife.

He still contributes towards a medical aid, which covers him and his wife.

ANNEXURE E represents the tax tables for the year 2023/2024.

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

5.2.1 Determine Dante's annual medical tax credit amount. (3)

5.2.2 Calculate the tax rebate amount that will be deducted from Dante's annual tax. (3)

5.2.3 TABLE 6 on ANNEXURE E show the tax table and rebates for the year 2023/2024.

Dante receives a taxable income of R35 750 per month.

Calculate the monthly amount that Dante will contribute towards tax. (7)

[27]

TOTAL: 150

Copyright reserved

2024 PREPARATORY EXAMINATION

PAPER 1 ADDENDUM

QUESTION 1		
1.1.1	**CA** if 1 value is omitted.	
1.1.2	Difference = 2 194 – 3 280 = 1 086 **(full marks)** **If** Difference = 2 194 – 3 280 = -1 086 **(award 1 mark out of 2)**	
1.1.3	Day 31 **(award 1 mark out of 2)** 32 697 or 25,46 or 2 293 **(award 1 mark out of 2)**	
1.1.4	**If** 1 value omitted **(award 1 mark out of 2)** **If** Ascending order **(award 1 mark out of 2)**	
1.1.5	No penalty for order **If** 2 084 : 3 280 1: 1,57 OR 0,64: 1 **(full marks)** **If** 2 084 : 3 280 $\therefore \frac{521}{820}$ **(full marks)**	
1.1.6	**CA** answer if incorrect RT but correct method.	
1.2.1	No penalty for omitting unit	
1.2.3	238,36 ÷ 100 = R2,3836 **(award 1 mark for CA answer)**	
1.2.4	R285,34 – R204,11 ✓ =R81,23✓ ∴ R81,23 × 1,15 = R93,41 **(full marks)** **If VAT excl values used** R285,34 – R204,11 =R81,23 **(award RT and CA answer)**	

Stanmorephysics.com

Downloaded

QUESTION 2		
2.1.1	**Accept** Own your morning✓✓ **OR** Elevate your life✓✓	
2.1.2	% difference = $\frac{249-360}{360} \times 100\%$ = -30,83% **(full marks)**	NPR
2.1.3	**Alternative** 5 × 139 = 695 695 ÷ 1,15 = 604,35 7 × 357 = 2 499 2 499 ÷ 1,15 = 2 173,04 Total = 604,35 + 2 173,04 = 2 777,39 **(full marks)** **If** Total of 5 copies cheapest = R139 + R149 + R189 + R225 + R279 = R981 Total of 7 copies = 7 × R357 = R2 499 Total = R981 + R2 499 = R3 480 Total excluding VAT = R3 480 ÷ 1,15 = R3 026,09 **(full marks)** **If** Total of 5 copies cheapest = R139 + R149 + R189 + R225 + R279 = R981 Total of 7 copies = 7 × R360 = R2 520 Total = R981 + R2 520 = R3 501 Total excluding VAT = R3 501 ÷ 1,15 = R3 044,35 **(Award 5 marks out of 6)** **If** multiplied 5 and 7 with incorrect values, **(Award 4 marks out of 6)**	
2.1.4	**If** 255 × 189 = 42 525 R42 525 – R41 150 = 1 375 **(award 4 out of 6)**	
2.1.5	**If** numerator is wrong, **CA answer.**	
2.2.1	**Alternatives** Lack of employment, Gross Domestic Product (GDP), Natural disaster, Crime **Note:** the responses should relate to the context and/or the key issues highlighted.	
2.2.4	**If for Dario** ¥246 900 × 0,00633462986 **(from 2.2.2.)** = ¥1 564, 020112 **(2 marks)**	

Stanmorephysics.com

Downloaded

QUESTION 3		
3.2	Survey is the method of collecting data **NOTE**: The key word is collection of data	
3.4	**AO**	
3.5	**AO** **Accept** The use of row for January for full marks	
3.6	**Accept** any rounding i.e. down or up If wrong column used, concept and calculations should be correct. **(award 2 marks out of 3)**	
3.7	**Alternative** $\%\text{ difference} = \frac{438\,182 - 347\,538}{1\,018\,494} \times 100\%$ **✓RT ✓M ✓RT ✓MA** $= \frac{90\,644}{1\,018\,494} \times 100\%$ **✓S** $= 8{,}8998\%$ **✓A** ∴**Not correct** ✓O	3RT correct values 1M subtraction 1M multiplication by 100% 1S simplification 1A answer 1O opinion
3.8	**Accept** 100% for Afrikaans paper.	
QUESTION 4		
4.1.3	**Accept** The correct percentages for class A or class B or class C used, (**full marks)** **OR** Five number summary (**full marks)**	
4.1.5	**Alternatives** **IF IQR used,** Class A✓ is the best, the IQR✓✓ is less. ✓ **If range used;** Class A range = 91,5 – 60,5 = 31✓ Class B range = 97,5 – 22 = 75,5✓ Class C range = 84 – 34 = 30✓ ∴Class C ✓is the best, the range is less.	
4.2.2	**AO**	
4.2.4	Number of boards = 4 500 ÷ 450 = 10 Number of boards = (4 250 – 2500) ÷ 175 = 10 ∴ 9 charcuterie boards **(Full marks) Accept 10** **OR** Income = 450×10 = 4 500 Expense = 2500 + 175 × 10 = 4 250 ∴ 9 charcuterie boards (**Full marks) Accept 10** **OR**	

Stanmorephysics.com

Downloaded from Stanmorephysics.com

	Number of boards = 4 050 – 450 = 9 ∴ 9 charcuterie boards **(Full marks) Accept 10** **OR** Number of boards = (4 075 – 2500) ÷ 175 = 9 ∴ 9 charcuterie boards **(Full marks) Accept 10**	

QUESTION 5		
5.1.3	**Alternative** Rebate for 1 Solar Panel = R4 000 × 25%✓ =R1 000✓ Rebate for 6 Solar panels = 6 × R1 000✓ = R6 000✓ **CA number of panels from 5.1.1**	
5.1.4	**Alternative** Total monthly repayment = R85 000✓ × 1,125✓ ×1,125✓ ÷24✓ = R4 482,42✓	1RT loan amount 1M multiplication by 1,125 1M multiplication by 1,125 2M dividing by 24 1A answer
5.2.1	**AO**	
5.2.2	**AO**	