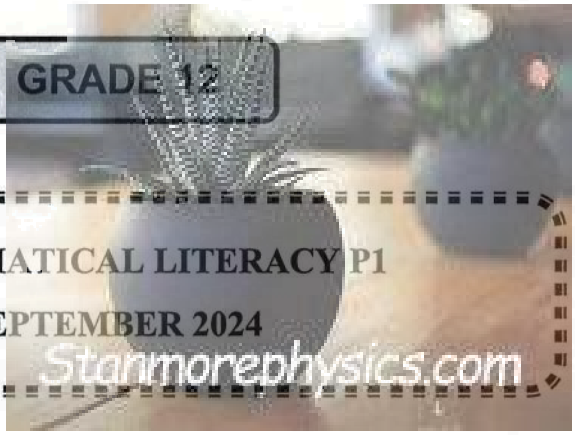
LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE



GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2024

Stanmorephysics.com

MARKS: 150

TIME: 3 HOURS

EMLITP1

This question paper consists of 13 pages and a 3-page ADDENDUM.

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 2.1
   - ANNEXURE B for QUESTION 4.2
3. Number the questions 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 ALL the final answers appropriately according to the context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Diagrams are NOT necessary drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

Copyright reserved

QUESTION 1

1.1 Canada is known to be the coldest country in the world. TABLE 1 below shows the minimum, maximum and mean temperatures recorded from 16 December 2023 to 25 December 2023.

TABLE 1: MINIMUM, MAXIMUM AND MEAN TEMPERATURES RECORDED IN CANADA FROM 16 DECEMBER 2023 TO 25 DECEMBER 2023.

DATE	MIN TEMP IN °C	MAX TEMP IN °C	MEAN TEMP IN °C
16/12/2023	-5,7	4,0	-0,9
17/12/2023	-5,7	7,6	1,0
18/12/2023	7,0	12,7	9,9
19/12/2023	6,1	12,7	9,4
20/12/2023	-0,6	6,1	2,8
21/12/2023	-7,4	-0,2	-3,5
22/12/2023	-8,6	-4,4	-6,5
23/12/2023	-8,8	-0,9	-4,9
24/12/2023	-4,7	4,1	-0,3
25/12/2023	-0,8	8,1	3,7

[Adapted from climate.weather.gc.ca]

Use TABLE 1 above to answer the questions that follow.

1.1.1 Arrange the minimum temperatures in ascending order. (2)

1.1.2 Identify the date on which it was the coldest in Canada. (2)

1.1.3 The temperatures given in TABLE 1 above represent numerical data. State whether the data is discrete or continuous (2)

1.1.4 Calculate the difference in temperature between the maximum and minimum temperatures on 23 December 2023. (3)

1.1.5 Write down the number of days on which the mean temperature was less than 1°C. (2)

1.2 Most people communicate through social media throughout the world. The most popular social networks as of October 2023, in number of monthly active users (in millions) are shown in TABLE 2 below.

TABLE 2: MOST POPULAR SOCIAL NETWORKS IN NUMBER OF MONTHLY ACTIVE USERS (IN MILLIONS)

Social Network	Number of Monthly Active Users (In Millions)
Douyin	743
Facebook	3 030
Facebook Messenger	1 036
Instagram	2 000
Kuai Shou	673
Snapchat	750
Telegram	800
TikTok	1 218
WeChat	1 327
WhatsApp	2 000
X Twitter	666
You Tube	2 491

SHOW OF FACEBOOK USERS

Age group	Female	Male
13 – 17	2,1%	2,7%
18 – 24	8,9%	12,6%
25 – 34	12,3%	17,6%
35 – 44	8,5%	10,9%
45 – 54	5,5%	6,1%
55 – 64	3,8%	3,5%
65+	3%	2,6%
Total	.....	.....

[Adapted from www.statista.com]

Stanmorephysics.com

Use TABLE 2 above to answer the questions that follow.

1.2.1 Write down the number of TikTok users in numerals without words. (2)

1.2.2 Determine the age group where the different percentage between male and female Facebook users is exactly 0,3. (2)

1.2.3 Calculate the total percentage of male Facebook users. (2)

1.2.4 Identify the social network with the second least number of users. (2)

Copyright reserved

1.3 Tumelo runs a baking business from her home. She bakes and sells jam tarts. The jam tarts are sold in packs. Each pack contains 6 jam tarts. The ingredients for baking the jam tarts are shown in TABLE 3 below.

TABLE 3: INGREDIENTS FOR BAKING 1 BATCH OF JAM TARTS. (24 JAM TARTS)

Ingredients	Quantity purchased	Cost of items purchased	Actual quantity used	Actual cost of quantity used
Vanilla essence	100 ml	R30,00	5 ml	**A**
Flour	5 kg	R65,99	1,5 kg	R19,80
Baking powder	200 g	R34,99	10 g	R1,75
Soft margarine	500 g	R35,98	250 g	R17,99
Sugar	2,5 kg	R54,99	150 g	R3,30
Eggs	½ dozen	**B**	2 eggs	R3,66
Apricot jam	450 g	R27,00	100 g	R6,00
Total				**R54,00**

[Adapted from www.briefly.co.za]

Use TABLE 3 and the information above to answer the questions that follow.

1.3.1 Define the term *Cost price* in the given context. (2)

1.3.2 Calculate the missing values: (2)

(i) A

(ii) B (3)

1.3.3 Calculate the actual cost of ingredients to make ONE pack of jam tarts. (3)

1.3.4 Determine the number of batches she will be able to make with the quantity of baking powder she bought. (2)

[31]

QUESTION 2

2.1 Randy Smith, 45 years old works for the department of home affairs at Beitbridge border post. He received the tax document shown on ANNEXURE A for the tax year 2022/23. He contributes towards medical aid for himself, his wife and two children. Income tax rates for 2022/23 are shown in TABLE 4 below.

TABLE 4: 2022/23 TAX RATE TABLE

TAXABLE INCOME(R)	RATES OF TAX
0 – 226 000	18% of taxable income
226 001 – 353 100	40 680 + 26% of taxable income above 226 000
353 101 – 488 700	73 726 + 31% of taxable income above 353 100
488 701 – 641 400	115 762 + 36% of taxable income above 488 700
641 401 – 817 600	170 734 + 39% of taxable income above 641 400
817 601 – 1 731 600	239 452 + 41% of taxable income above 817 600
1 731 601 and above	614 192 + 45% of taxable income above 1 731 600

TAX REBATES

REBATE	2022/23	2021/22	2020/21
Primary (below age 65)	R16 425	R15 714	R14 958
Secondary (age 65 – below 75)	R9 000	R8 613	R8 199
Tertiary (75 and older)	R2 997	R2 871	R2 736

MONTHLY MEDICAL AID TAX CREDITS

	2022/23	2021/22	2020/21
Principal member	R347	R332	R319
First dependent	R347	R332	R319
Each additional dependent	R234	R224	R215

[Adapted from www.sars.gov.za]

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

2.1.1 Write down Randy's income tax number. (2)

2.1.2 State the period in months covered by the tax document. (2)

2.1.3 Calculate his annual medical tax credits. (4)

2.1.4 Randy stated that his total tax payable for 2022/23 was incorrectly calculated.

Verify showing ALL calculations if his statement is valid. (8)

Copyright reserved

2.2 Gavaza needs a new stove. She saw the following advertisement on a local store leaflet.



5- Burner gas/ electric stove with auto ignition.
Cash Payment Option

New selling price including VAT R10 999,00

Save R2 000,00

Hire Purchase Option

20% deposit

R609,00 × 30 Months

Total cost excluding deposit R……...

[Adapted from bradlows.co.za]

Use the information above to answer the questions that follow.

2.2.1 Define the concept *hire purchase.* (2)

2.2.2 Calculate the original price of the stove. (2)

2.2.3 Calculate the VAT amount included in the new selling price. (3)

2.2.4 Explain why the stove in the advertisement is shown as gas / electric. (2)

2.2.5 Gavaza stated that if she buys the stove with the Cash Option, she will save more than one third of the total cost price including deposit of the hire purchase option.

Verify with calculations if her statement is valid. (8)

[33]

QUESTION 3

3.1 TABLE 5 below shows a summary of the highest level of education for all South Africans who were 25 years and older in 2001, 2011 and 2022.

TABLE 5: HIGHEST LEVEL OF EDUCATION OF PERSONS 25 YEARS AND OLDER IN 2001, 2011 AND 2022

Educational attainment	Census year		
	2001	2011	2022
No Schooling	4 567 497	2 665 874	2 576 011
Some Primary	4 083 742	3 790 134	2 778 297
Completed Primary	1 623 467	1 413 895	1 317 726
Some Secondary	7 846 125	10 481 579	11 880 302
Completed grade 12	5 200 602	8 919 608	14 122 681
Post School	2 151 336	3 644 617	4 602 765
Other	-	113 586	300 207
Total	.....	**31 029 291**	**37 578 088**

[Adapted from www.statssa.gov.za]

Use TABLE 5 above to answer the questions that follow.

3.1.1 Write down the type of instrument used to collect the data in Table 5. (2)

3.1.2 Determine the total number of people 25 years and older in 2001. (3)

3.1.3 The number of people who were 25 years and older in 2011 was approximately 59,93617%.

Determine the total number of people who were younger than 25 years in 2011. (5)

3.1.4 The total population in South Africa in 2022 was 62 027 503.

Determine the probability, as a decimal of randomly selecting a person with only grade 12 as their highest level of education. (3)

Copyright reserved

3.2 TABLE 6 below shows the percentage distribution per province of people aged 25 years and older with grade 12 as the highest level of education in 2022.

TABLE 6: PERCENTAGE DISTRIBUTION PER PROVINCE OF PEOPLE WITH GRADE 12 AS THEIR HIGHEST LEVEL OF EDUCATION.

PROVINCE	EC	FS	GP	KZN	LP	MP	NC	NW	WC
%	25,2	34,3	40,9	39,0	29,0	37,7	28,6	32,8	33,3

[Adapted from www.statssa,gov.za]

NOTE:

EC – Eastern Cape	KZN – Kwa Zulu Natal	NC – Northern Cape
FS – Free State	LP – Limpopo	NW – North We
GP – Gauteng	MP – Mpumalanga	WC – Western Cape

Use TABLE 6 above to answer the questions that follow.

3.2.1 Determine the median percentage and write down the name of the province which represent the median. (3)

3.2.2 Calculate, as a percentage, the probability of randomly selecting a province with less than 30% of persons with grade 12 as their highest level of education. (3)

3.2.3 Explain why the total of the percentages in TABLE 6 does not add up to 100 %. (2)

3.2.4 Given that the 75^{th} percentile is 38,35%, calculate the Inter quartile range. (5)

3.2.5 Give a reason why a pie chart is NOT suitable to represent the above data. (2)
[28]

QUESTION 4

4.1 Lihle Mabuza got two job offers. One in the USA as a farming assistant with a monthly salary of US$ 3 998. The second offer is in Canada as a farming supervisor with a monthly salary of 5 384 CAD. TABLE 7 below shows the currency conversion factors on 16 February 2024.

TABLE 7: CURRENCY CONVERSION FACTORS ON 16 FEBRUARY 2024

Currency	Exchange rate
CAD to South African Rand	1 CAD = 14,01 South African Rand
South African Rand to US $	1 South African rand = US $ 0,05288
US $ to CAD	1 US $ = 1,35 CAD

[Adapted from www.xe.com]

NOTE: CAD = Canadian Dollar
US $ = US Dollar

Use TABLE 7 and the information above to answer the questions that follow.

4.1.1 Write down the abbreviation for the South African rand. (2)

4.1.2 Calculate the exchange rate between the US dollar and the South African Rand in the form US $1 = R…….. (3)

4.1.3 Identify the strongest currency against the South African Rand. (2)

4.1.4 Lihle stated that the salary offer in USA is R200,00 more than the salary offers in Canada in terms of South African rands.

Verify, showing ALL calculations whether Lihle's statement is valid. (8)

4.2 An extract from the consolidated budget for the financial year 2023 of Ba-Phalaborwa local municipality is given in ANNEXURE B. Some amounts have been omitted.

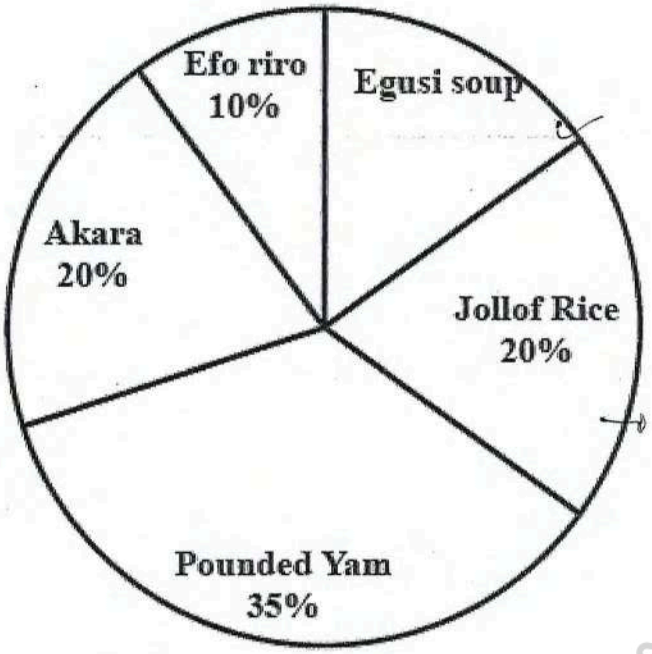
NOTE: All amounts are in thousands of rands.

Use ANNEXURE B to answer the questions that follow.

4.2.1 Calculate the missing value D. (3)

4.2.2 Determine the missing value E and state whether it is a surplus or deficit. (6)

4.3 The pie chart below shows the percentage of customers who ordered different meals at a Nigerian restaurant one evening.



Use the Pie chart above to answer the questions that follow.

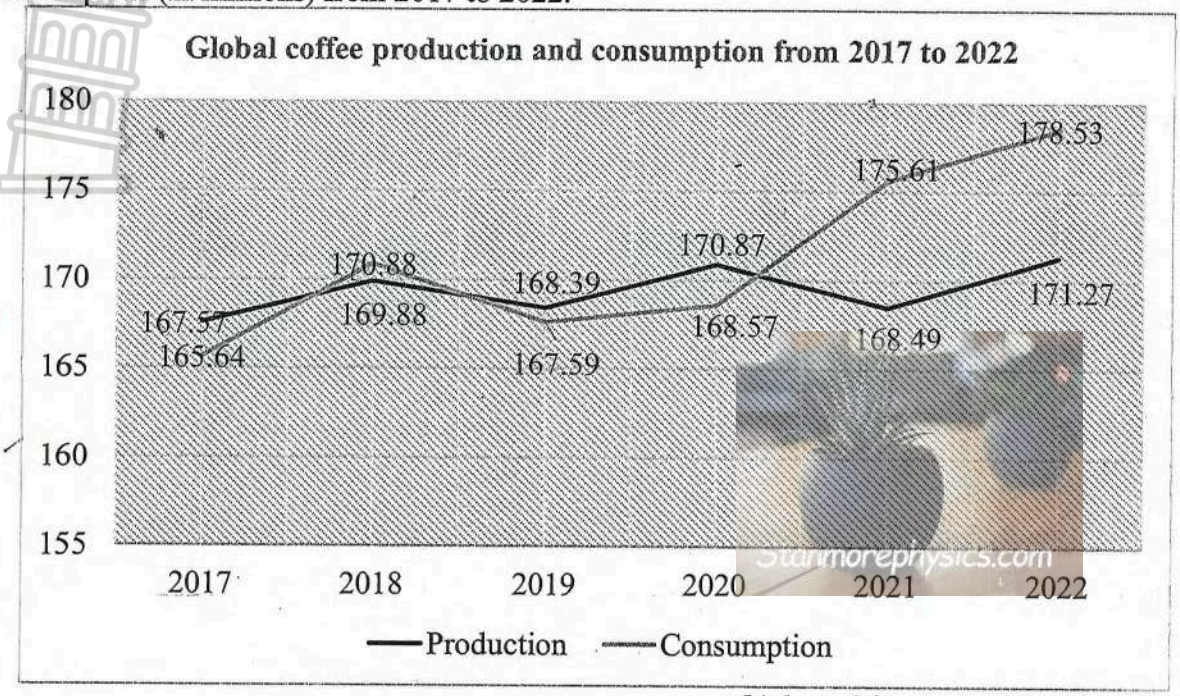
4.3.1 Calculate the number of customers who ordered Egusi soup, if 60 customers ordered Joll of rice. (4)

4.3.2 Determine the probability, as a fraction, of randomly selecting a customer who would NOT have ordered Pounded Yam. (2)

[30]

QUESTION 5

5.1 World coffee market remains in deficit. The graph below shows the global production and consumption (in millions) from 2017 to 2022.



[Adapted from www.thejakarta.com]

Use the graph above to answer questions that follow.

5.1.1 Determine the year with the largest range. (4)

5.1.2 Calculate the average coffee consumption from 2017 to 2022. (3)

5.2 The cost of electricity has increased drastically over the past two years in South Africa. TABLE 8 below shows the average monthly increases in the cost of electricity (including VAT) of Emalahleni local municipality between 2022 and 2023. Some amounts have been omitted.

TABLE 8: AVERAGE MONTHLY INCREASES IN THE COST OF ELECTRICITY (INCLUDING VAT) OF EMALAHLENI LOCAL MUNICIPALITY BETWEEN 2022 AND 2023.

	Average monthly usage in kwh				
	50	**150**	**600**	**1000**	**1500**
Amount payable in 2022	R0,00	R173,22	R1 121,84	R2 242,48	R3 643,28
Amount payable in 2023	R94,28	R332,74	R1 618,84	R2 666,23	**S**
Increase between 2022 and 2023	R94,28	**P**	R497,00	R423,75	R1 405,19
% increase between 2022 and 2023	.....	92,0910%	44,3022%	**Q**	38,5693%

Domestic prepaid electricity tariffs

Block	**Usage in kwh**	**Tariff per kwh**	
		2022	**2023**
1	0 – 50	R0,00	R1,8856
2	51 – 350	R1,7322	R2,3846
3	351– 600	R2,4087	R3,2367
4	> 600	R2,8016	R3,8107

[Adapted from www.emalahlenilm.gov.za]

Use TABLE 8 above to answer question that follow.

5.2.1 Calculate, to the nearest cent, the tariff increases in block 2. (2)

5.2.2 Determine the missing values:
(a) P (2)
(b) Q (3)
(c) S (3)

5.2.3 Show how the amount of R173,22 was calculated. (3)

5.2.4 Shalene used an average of 1 350 kwh of electricity per month. Determine the total annual increase of her electricity bill between 2022 and 2023. (8)

[28]

TOTAL MARKS: 150

Copyright reserved

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12



MATHEMATICAL LITERACY P1

SEPTEMBER 2024

ADDENDUM

EMLITP1AD

This ADDENDUM consists of three (03) pages with two (02) annexures

Copyright reserved

ANNEXURE A

QUESTION 2.1

EMPLOYEE INCOME TAX CERTIFICATE [IRP 5]

EMPLOYEE INFORMATION		YEAR OF ASSESSMENT 2022/2023 TAX PERIOD START DATE:20220301 TAX PERIOD END DATE:20230228
EMPLOYEE NUMBER: 81503416	INCOME TAX NUMBER:2237654213	CELL NUMBER: 0713355844
SURNAME: SMITH	DATE OF BIRTH: 17/12/1969	BUSINESS TEL: 015 530 0066
NAME: RANDY		EMPLOYER DETAILS
STREET NO	1688 KREMETART AVE MUSINA	DEPARTMENT OF HOME AFFAIRS
TOWN	MUSINA	
INCOME RECEIVED	INCOME RECEIVED CONTINUE	TAX CREDITS/EMPLOYER/EMPLOYEE CONTRIBUTION
R 469 385 BASIC INCOME	GROSS EMPLOYEE INCOME	SITE
R 43 524 EXTRA INCOME	R 512 909	R0
	DEDUCTIONS	PAYE
	R 38 468	R 80 972,71
	TOTAL DEDUCTIONS	EMPLOYER AND EMPLOYEE CONTRIBUTION
	R 38 468	R0
	GROSS EMPLOYEE INCOME[TAXABLE]	TOTAL TAX ✓ R 80 972,71
	R 474 441	MEDICAL TAX CREDIT C

[Adapted from actual tax document]

Stanmorephysics.com

Copyright reserved

ANNEXURE B

QUESTION 4.2

EXTRACT FROM BA-PHALABORWA LOCAL MUNICIPALITY CONSOLIDATED BUDGET [IN THOUSANDS OF RAND]

Description	2021/22	Current Year		2023/24 Medium Term Revenue and Expenditure
	Audited	Original Budget	Adjusted Budget	Budget Year 2023/24
Revenue				
Property Rates	141 319	142 356	173 240	184 556
Service Charges	130 692	187 273	172 273	196 353
Investment Revenue	2 434	2 481	2 481	2 613
Transfer cost	**D**	237 139	236 221	264 029
Other Revenue	97 390	97 556	80 723	85 381
Total Revenue	**601 228**	**666 806**	**664 939**	.....
Expenditure				
Employee Costs	165 677	185 239	185 231	199 891
Remunerations of Councillors	17 262	19 089	19 089	20 101
Depreciation and Amortisation	86 780	75 295	75 295	79 285
Interest	18 266	2 500	18 500	19 481
Inventory Consumed and bulk purchases	130 847	141 899	141 588	164 979
Transfers and Subsidies	9 854	1 091	591	1 020
Other expenditure	197 761	201 303	189 109	279 769
Total Expenditure	**626 447**	**626 416**	**629 403**	.....
Surplus/Deficit	**(25 219)**	**40 390**	**35 536**	**E**

[Adapted from www.phalaborwa.gov.za]

Copyright reserved